Electronic Media Polio Immunization Campaign

Effects of Health Communication on Parents in NWFP, Pakistan

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2006
FORWARDING SHEET

This PhD dissertation entitled “Electronic Media Polio Immunization Campaign--Effects of Health Communication on parents in NWFP, Pakistan” has been submitted by Khalid Sultan for the fulfillment of the requirements of the degree of Doctor of Philosophy (PhD) in Mass Communication. As a Supervisor, I am fully satisfied with his work and recommends that the thesis may be forwarded for further processing.

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The research thesis attached hereto, entitled “Electronic Media Polio Immunization Campaign--Effects of Health Communication on parents in NWFP, Pakistan” submitted by Khalid Sultan in partial fulfillment of the requirements for the Degree of Doctor of Philosophy (PhD) in Mass Communication is hereby accepted.

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<td>AFP</td>
<td>Acute Flaccid Paralysis</td>
</tr>
<tr>
<td>BHU</td>
<td>Basic Health Unit</td>
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<tr>
<td>CHL</td>
<td>Communication for Healthy Living</td>
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<td>EPI</td>
<td>Expanded Program of Immunization</td>
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<tr>
<td>FATA</td>
<td>Federally Administered Tribal Areas</td>
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<td>FY</td>
<td>Fiscal Year</td>
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<td>GPEI</td>
<td>Global Polio Eradication Initiative</td>
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<td>HEC</td>
<td>Health Education Cell</td>
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<tr>
<td>HSE</td>
<td>High Socio-economic</td>
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<tr>
<td>IEC</td>
<td>Information, Education and Communication</td>
</tr>
<tr>
<td>KAP</td>
<td>Knowledge Attitude and Practice</td>
</tr>
<tr>
<td>LSE</td>
<td>Low Socio-economic</td>
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<tr>
<td>MCH</td>
<td>Maternity and Child Health Center</td>
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<td>NWFP</td>
<td>North West Frontier Province</td>
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<td>OPV</td>
<td>Oral Polio Vaccine</td>
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<td>PHAC</td>
<td>Public Health Agency of Canada</td>
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<tr>
<td>PBC</td>
<td>Pakistan Broadcasting Corporation</td>
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<tr>
<td>PRB</td>
<td>Population Reference Bureau</td>
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<tr>
<td>PRSP</td>
<td>Poverty Reduction Strategy Paper</td>
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<tr>
<td>PSLM</td>
<td>Pakistan Social and Living Standards Measurement</td>
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<tr>
<td>PTV</td>
<td>Pakistan Television Corporation</td>
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<td>RHC</td>
<td>Rural Health Center</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>TMP</td>
<td>Travel Medicine Program</td>
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<td>TBC</td>
<td>T.B Center</td>
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<tr>
<td>UC</td>
<td>Union Council</td>
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<td>VBFPW</td>
<td>Village-based Family Planning Workers</td>
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DEDICATION

This PhD Research is dedicated to Major ® Muhammad Aamer, who has rendered meritorious services for Pakistan. A prolific writer, credible political and military analyst, intellectual, and what not.

No doubt, he is an asset of our family.
ACKNOWLEDGEMENT

First of all I am highly indebted to Allah Almighty-The most gracious and the most merciful who enabled me to complete the gigantic task of a PhD research.

I have to thank a number of people who helped this research work to see the light of day. I owe a great intellectual debt to my research supervisor, Dr. Mujahid Ali Mansoori, Associate Professor, Department of Mass Communication, University of the Punjab, Lahore for helping me to render this thesis complete. His valuable suggestions, advices, guidance and of course hours and hours debates on the topic is an asset for me for which I shall always be grateful.

I would also like to offer special thanks to Dr. Mughees Uddin Sheikh, Dean Faculty of Behavioral and Social Sciences and Chairman Department of Mass Communication, University of the Punjab, Lahore who is no doubt responsible for my academic growth in Media Studies.

Appreciation are due to my teachers in Journalism and Mass Communication including Prof. Dr. Miskeen Ali Hijazi, Prof. Dr. Shafiq Jalandhry, Prof. Dr. Shahjehan Sayed, Dr A. R. Khalid, Dr. Aslam Pervez, Sir Naeem Gul, Assistant Professor, Dr. Afeera Hamid, Dr. Altafullah Khan, Dr. Muhammad Nawaz, Dr. Ahsan Akhtar Naz, Dr. Syed Abdul Siraj, for their brilliance and unwavering guidance, academic and moral support during this research. I also wish to acknowledge an immeasurable debt of gratitude to Sir Iftikharuddin, Chairman, Department of Statistics, Government Post-Graduate Degree College, Mansehra and Dr. Bahrwar Jan, Assistant Professor, Department of Statistics, University of Peshawar for their valuable help in the statistical
application and analyses. Thanks to my brother, Mohammad Akbar for helping in data
entering and arranging the manuscript and to the students, Department of Journalism and
Mass Communication, University of Peshawar, who facilitate me in data collection from
NWFP.

I would also like to pay my tributes to Dr. Jeffrey M. Bates, Project Officer (Polio
Communication & Social Mobilization) UNICEF, Islamabad, Dr. Abraham Mulugeta,
Medical Officer, WHP/PEI, NWFP, Dr. Khalid Nawaz, SSO, WHO/PEI, NWFP, Dr.
Suleman Malik, Program Communication officer, UNICEF, Islamabad, Dr. Riaz
Nasrullah, Campaign Support Officer, WHO, NWFP, Sir Hameed Khattak, Director
English Academy, Peshawar, Tahir Mehmud, Head of Current Affairs, PTV, Peshawar
for providing relevant literature, information, guidance, advices and support during the
hard days of research.

Special thanks are extended to all my class fellows, and friends especially to Mr.
Sajjad Paracha, Mr. Mirza Jan Masud, Miss Noshina Saleem, Mrs. Bushra Hameedur
Rahman, Mr. Azmat Rasool, Mr. Tanveer Shahezad, Mr. Malik Babar Rabbani. Thanks
are also due to the entire staff of Mass Communication Department, University of the
Punjab, Lahore.

Finally, my special prayers are for my mother, my wife, Qanita Khalid and
children; Zoha Khalid, Mashood Khalid, Aqsa Khalid and Muhammad Bin Khalid who
constantly inspires me with their perseverance and positive attitude towards life.

I am solely responsible for any errors in this dissertation.

KHALID SULTAN

March 5, 2006
ABSTRACT

Exclusively focused on the Effects Approach of Media Studies, this dissertation develops a framework of adoption of polio immunization innovations by the divergent socio-economic status group of parents in NWFP, Pakistan. It focuses on the effects of Health Communication via electronic media on parents belonging to High Socio-economic (HSE) and Low Socio-economic status at different levels i.e. awareness/knowledge, persuasion, decision and confirmation.

Moreover, this study aims to identify various semantic, structural, socio-religious permissibility, and psychological barriers in the effect process, and to identify the non-adopter category and the reasons behind rejecting the innovation and of course the gap between the HSE and LSE in adopting the innovation.

The dissertation addresses main research questions that is “To what extent electronic media polio immunization campaigns influence parents belonging to higher socioeconomic (HSE) and lower socioeconomic (LSE) status at various stages of innovation-decision process in NWFP, Pakistan?” and “Whether or not the effects of electronic media polio immunization campaign are uniform on parents belonging to LSE and HSE.” Research technique applied in this study is called Survey Research (Analytical Survey) attempt to describe and explain why certain situations exist. In this approach two or more variables are usually examined to test research hypothesis. The results allow researcher to examine the interrelationship among variables and to draw explanatory inferences. The methodology used in this study is descriptive (what is going on) and explanatory (why it is going on) in nature for evaluating message-oriented information related to the topic. The research method involve data gathering through closed-ended
questionnaire of multiple choices from the respondents (parents) from the area under study (NWFP, Pakistan). In order to explore the Polio immunization aspect of the health sector and to seek quantitative data, the researcher through a well trained group of students had gathered the data through a questionnaire.

To meet the aforementioned objectives two hypotheses are formulated. These hypotheses are; 1) Higher the socioeconomic status of parent, the greater would be the awareness level and practice of polio immunization of children and 2) Heavy the exposure to the electronic media polio immunization campaign, the higher is the effects at various stages (knowledge/awareness, persuasion, decision and confirmation) of innovation decision process. The data is analyzed through statistical tests and the empirical evidence provides a base for the acceptance/rejection of the hypotheses.

This study consists of six chapters. Chapter I, Introduction, describes the premise of the whole study. Started from its basic assumption of communication’s role in present era of technological advancement and media development, this part of the study explains various concepts widely used in media studies and of course in this research work. Chapter II, Literature review, emphasizes the importance of organizing the researcher thinking and referring relevant work done by the scholars of media studies. Efforts have been made to acquaint the present study with a logical support and proper references. Chapter III, Theoretical framework, discusses many of the theories relevant to the study. In this chapter various theories of effects model of mass media are crafted and stitched in such a way that it provide a methodical theoretical foundation to the research. Models of media effects and health communication are also discussed in this chapter. Major variables, Operationalization of the concepts, theoretical statements and hypotheses are
also explained. Chapter IV, Research methodology, elaborated techniques and research
designs to carry out the study. Beginning from framing the research questions, this
chapter has covered the methodology of the dissertation in topics like research design,
universe, target group, sampling techniques, sample frames, sampling methods, sources
of data and collection, pilot study, questionnaire preparation it's pre-testing and
distribution. In Chapter V, Data analysis and findings, the data has been analyzed
scientifically using statistical methods and tests. On the basis of the results, analysis and
findings were drawn. In Chapter VI, Conclusion is drawn from the data followed by a
logical discussion. At the end of the chapter some suggestions and recommendations
were tailored for the benefit of future researcher and students of the field. In references
section the researcher has referred works from various books, publication, research
journal, internet, article in press, magazine, newspapers, encyclopedia, thesis, videotape,
electronic source, and web page. In the Appendix a questionnaire and a map of NWFP is
attached.
CHAPTER 1

Introduction

1.1 Background

The last 50 years have seen communication study applied to become a powerful force for public education and behavior change. With the growth of mass media and the scientific methods to measure impacts, communication now plays a crucial role in social change, especially in the nations of Latin America, Africa, and Asia. It promises to play even larger role in the future. The power of communication is clear. Communication influences how people vote. Communication determines what people buy. Communication affects what people wish for and what they aspire to become. Communication shapes how people conduct their daily lives, even their sexual behavior (Piotrow, 1997 p.1).

There is a surprisingly long tradition of effects-based audience research, and an examination of it reveals a significant body of different approaches. All have in some way sought to examine the effects of media output on their audiences and all have argued that the media influence their audiences in some way (Taylor, 1999 pp.157-158).

In the field of public health, substantial evidence shows that: people want to know more about their health; people want to talk more about health to friends and family, hear about it through mass media, and discuss it with competent, caring service provider; people are willing to change their health behavior; and public health communication programs are helping people make these changes (Piotrow, 1997 p.1).

Last decades of the 20th century bear testimony to the fact that globally, and in Pakistan too, several health development programs and campaigns such as polio
immunization campaign, prevention and control of communicable diseases, the campaign 
for the use of iodized salts, the use of ORS and family planning etc. have been launched 
through mass media in order to bring attitudinal change for the sake of social 
development. Huge amount is being spent on these campaigns even today. One general 
impression regarding the effects of all these campaigns is that the mass media in Pakistan 
have not achieved uniformity in persuading the people to adopt new ideas\(^1\) floated 
through these campaigns.\(^2\) Does it mean that the mass media is inefficient? Or the 
messages regarding health communication campaign do not reach the target population or 
there exist a knowledge-gap\(^3\) (Tichenor, 1970 p.158-70 & Rogers, 1976 p.213-40) among 
the communities of the area under study.

This study is an attempt to answer these queries with special reference to examine 
the varying degree of effects through electronic media (Pakistan broadcasting corporation 
PBC and Pakistan television corporation PTV) in innovation decision process of health 
communication on parents having high socioeconomic (HSE) and low socioeconomic 
(LSE) status in connection with immunization of their children against polio during 
national immunization days (NID's) in urban and rural parts of North West Frontier 
Province (NWFP) of Pakistan. Moreover, this study aims to identify various semantic, 
structural, socio-religious permissibility, and psychological barriers in the effect process, 
of polio immunization campaigns.\(^4\) Semantic barriers mean that the audience members do 
not understand the communicated message-text and images. Structural barriers are 
defined as the non-availability of the required facilities for the adoption of the 
innovations being proposed. Socio-religious and psychological barriers stand for the 
erroneous beliefs about religions prescriptions or proscriptions in the adoption of some
innovations. Keeping in view the influence of these forces in the effects process, the study also addressed the issue of the non-adopter category and the reasons behind not adopting the polio immunization of their children.

Principally, any public communication campaign through mass media seems to represent someone's intention to influence someone else's beliefs or behavior, using communication appeals. Communication campaigns for improving health conditions are an integral part of development programs through mass media in Pakistan. There are a number of communication channels that the change agents using in various communication campaigns particularly in sectors of population control and public health. Huge numbers of advertisements are seen in the forms of posters, signboards, banners alongside the roads, on walls and in busy squares. The print media-- newspapers, magazines, and specified journals give a handsome space to these appeals. Electronic media in Pakistan like their contemporaries in the developed and developing countries of the world give a considerable time to these communication campaigns. In Pakistan, the donors' agencies usually are UNICEF, World Health Organization (WHO), Ministry of Population & Welfare, Health, Forest, Environment and Narcotics Control Board etc. These all are government agencies and have taken the responsibility to serve the population and look after national welfare. Since the earliest days of its existence, UNICEF has called the world's attention to the situation of children-to the many of them bruised by the operation of national societies and the global economy, to the ways in which they have suffered because of their parents' poverty, to how their health has suffered through lack of food or immunization and their development through poor health, abuse and neglect, and lack of education-and has taken action to offset the damage

According to the donor agencies, the main purpose of these campaigns is to influence the attitudes of the receivers and persuade them to adopt specific behavior for individual and collective benefits. The purpose of health education campaign through mass media is to help people to develop necessary attitude, knowledge and skills so that they can achieve an optimum state of health for themselves, their families and communities.

The child-health achievements are mixed with concern that what in 1990 seemed like unstoppable progress towards universal child immunization has stalled somewhat in the decade since. It is now clear that the levels of immunization at the time of the World Summit were actually lower, at 73 per cent, than was assumed at the time. Not only has the Summit goal of 90 per cent coverage not been achieved, but the world has struggled to maintain about the same levels of coverage. Children in the poorest countries are the least protected by vaccines and regular immunizations from dying before they are five years old, and the gap is growing between these children and those in the industrialized world that have such life-savers readily available (UNICEF, 2002 p.14).

"The Global Polio Eradication Initiative is a shining model of how we can come together against a common enemy of mankind." remarked United Nations (UN) Secretary-General, Kofi A. Annan. It is because of this universally accepted phenomenon that dramatic progress has been made since the Global Polio Eradication Initiative formed in 1988. Cases have plummeted by 99% (from 350,000 in 1988 to 784 in 2003). A disease which once crippled children in 125 countries around the world is now endemic in only six - Nigeria, India, Pakistan, Niger, Afghanistan and Egypt. Polio is on course to
become the second disease, after smallpox, to be wiped from the face of the earth (UNICEF, 2004). However, it is also important to note that as long as single child remains infected with poliovirus, children in all countries are at risk of contracting the disease (WHO, 2005).

Keeping in view the importance of health education especially through mass media, the government of Pakistan has created Health Education Cell (HEC) at the national and provincial levels. The Health Education and Communication Program in Pakistan is picking up. Nearly two decades back when this program was started it was considered a luxury addition to the health services. Only few realized the value and importance of education intervention. Now information, education and communication (IEC) a relatively new connotation for health education is being considered a basic pre-condition for the success of each and every health program. This has been demonstrated in case of expanded program of immunization (EPI).

Seen in this perspective it becomes evident that a very intensive health education campaign via mass media made possible to achieve wide coverage of polio immunization. Moreover, global polio eradication initiative (GPEI) has shown the world that even in the poorest countries, widespread and debilitating disease can be defeated," said Patty Stonesifer, co-chair and President of the Bill & Melinda Gates foundation. "Today, as a resurgence of polio threatens to roll back the amazing progress of the past 20 years, it is more important than ever that governments and donors support the final push to eradicate polio." 6

Irrespective of all these facts, it is not only a general observation but a proved fact
that a visible gap in knowledge, attitude and practice (KAP) among members of different social classes regarding polio immunization innovation exists in district Peshawar of NWFP, the area under study (Sultan, 2000 p.68). Similarly, researcher and practitioners involved with public health campaigns report a knowledge-gap among “the chronically uninformed.” That unflattering label tends to apply demographically to people who are nonwhite, less educated, and old (and, correspondingly, of lower socioeconomic background). Sadly and coincidentally, this same group is at greater risk than the rest of the population for many common diseases and health problems. Furthermore, as health information increasingly proliferates in volume and availability on the Web, the digital divide—a concept referring to lack of access to computers, online connections, and training in how to use new technologies—furthers the knowledge gap even more. Public health communication specialist Vicki Freimuth (1990) suggests several ways to address this problematic situation, including educational programs to improve reading and media literacy; better design and targeting of media messages, especially taking into account the cultural contexts of audiences; more reliance on TV and other nonliterary media in lieu of written brochures; and greater use of informal, community-based channels of communication (Martin, 2003 p.282).

It is in this context that the mass media in Pakistan has been encouraged by successive governments as a nation-building strategy, and welcomed by the people, who feel the media to be a link to economic and social development, and lack of access to them an indicator of backwardness. The media are increasingly a part of daily life for much of the population, even for those living a life in other respects highly traditional (UNICEF, 1992 p.23). The importance of differences between media content and other
sources of information about the world lies in the fact that our views of the world, and resulting actions, will be molded by our predominant source of information: the mass media (Shoemaker, 1996 p.59).

Giving the low levels of literacy and less infrastructure remote rural areas, it is PBC & PTV which reach the ordinary people of the country, and even the poorest place of high priority on acquiring these items. Ninety five per cent of the population has access to PBC (Orient, 2005 p. 47). It has 24 radio stations which daily broadcast more than 300 hours of news and programs of general interest in the field of information, health campaign, education and entertainment (Jan, 2005 p.48).

Similarly as per the latest research by Gallup, around 78 per cent of the total urban population watches television, out of which 13 per cent are occasional viewers and 65 per cent are regular i.e. people who watch TV at least 4 days a week. Owing to this tremendous growth, it is now considered an even more effective medium in terms of its research and impact. At present there are 12.28 million (estimated) (55 per cent) registered TV sets as per TV Audience Report 2004 by Gallup. Segregated results show that 77 per cent of the urban households and 44 per cent of the rural households own TV (Orient, 2005 p.46-49).

Communication is not merely a matter of transmitting information about how better health facilities be provided to the people and how things can be done better, how good health can be achieved, how agriculture productivity can be increased, how literacy rate be increased and how the population be controlled but has a broader function of helping people to restructure their framework in interpreting specific events and phenomena and relating to the larger area beyond their world.
This research will take into account the period from 1994-2005 (the period when polio immunization campaign through NID's was launched officially by Pakistan\(^7\) with the target to totally eradicate the polio from the globe by the end of 2005)\(^8\) (UNICEF, 2004).

In this research work the term 'parents' implies either to father or mother having kid/s. Whereas some parameters/yardsticks have been set to differentiate between the parents having high socioeconomic (HSE) and low socioeconomic (LSE) status—a prerequisite for one of the hypothesis to be tested. Moreover, for the socioeconomic status (SES), the researcher has taken the position that one; social standing is basically governed by one's economic status in society and second, education is also assumed to be a valid indicator of SES (Albert, 115-116). So the economic strength of the respondent and the education level played a dominant role\(^9\) while categorizing the parents having HSE and LSE status. Some other indicators to distinguish the two status groups are further elaborated in the explanation of the term (in 1.14 Chapter 1).

**1.2 An overview of Pakistan**

Land Area: 803,944 sq. km. (310,403 sq. miles)

Location: South Asia Latitude: 23.35 N to 37.05 N, Longitude: 61 E to 76 E

Boundaries: South: Arabian Sea; West: Iran; North West and North: Afghanistan; North-East: China; East: India.

Administrative Divisions:

<table>
<thead>
<tr>
<th>Province</th>
<th>Land</th>
<th>Population (1998 census)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balochistan</td>
<td>43.6%</td>
<td>4.96%</td>
</tr>
<tr>
<td>N.W.F.P.</td>
<td>9.4%</td>
<td>13.41%</td>
</tr>
</tbody>
</table>
Punjab 25.8% 55.62%
Sindh 17.7% 23.00%
FATA 3.4% 2.4%
Islamabad 0.1% 0.61%

Source: Orient, 2005 p.8

A part of the South Asian subcontinent, this land has been at the crossroads of history and seen the likes of great worriers, generals, sailors and tradesmen. The Greeks under Alexander and the Mongols came from the North. Muslim traders, emissaries and generals came over land and sea from Arabia or Central and Western parts of Asia. For almost two hundreds years prior to independence the subcontinent remained the “crown jewel” of the British monarchy. Pakistan was carved out as a homeland for the Muslims of South Asia, after a historic struggle under the leadership of Quaid-e-Azam (Father of the nation) on August 14, 1947. The ideological basis for partition of India into two national homelands, one for Hindus and the other for Muslims, was reflective of the desire of Muslims to forge their separate identity.

Geographically, Pakistan is a land of fascinating contrasts. Few countries the size of Pakistan can boast such a glorious variety in landscape. Three of the world’s greatest mountain ranges, the Hindukush, Karakoram and Himalayas come together in the north and are crowned with 40 of the 50 highest peaks in the world. Below these lofty mountains are the green alpine valleys of Kaghan, Swat and the Murree Hills where gushing white water streams flow amidst picturesque coniferous forests. Towards the south, the topography divides into the eastern Indus plain and the western mountainous plateaus. Stretching across 3000 kilometers, the Indus River is one of the longest in the
world. Its waters sustain the largest single man-made irrigation system on the globe. The southern coastline of Pakistan is sunny and inviting (Orient, 2005 p.4).

With 152.53 Million people estimated in 2004-05, Pakistan is the seventh most populous country in the world. The teeming millions who virtually roam the land, meagerly fed, scantly clad, devoid basic healthcare and educational facilities are added every year to the gigantic population of this poor member of the third world.

The 2002 World Population Data Sheet regarding demographic data and estimates for the countries of the world, released by Population Reference Bureau (PRB) in August 2002 shows Pakistan at seventh position among the list of the World’s largest country in terms of population. It merits mention that Pakistan could not stay at this position.

Having a higher rate of natural increase, as compared to other most populous countries of the world, the PRB in its demographic data and estimates by mid-2003 shows Pakistan at an ascended position i.e. at number sixth in the ranking of the world’s largest country in terms of population. If this trend of natural increase in population continues, Pakistan will become the fourth most populous state of the world with a population of 249.7 million by the year 2025 (PRB, 2002 and PRB, 2003). In 1951 the population of the country was 33.7 million, which has increased to 85.1 million by 1981 and further to about 149 million by the year 2003 (Government of Pakistan, 2002-03 p-178).

The major factor contributing to the population growth has been the sustained gap between low mortality and high fertility levels over the last three decades. Although life expectancy at birth increased to 64.6 years in 1996, infant and child mortality rates, respectively at 95 and 137 per 1,000 births, remain among the highest in the world. Maternal morality is estimated to be 340 per 100,000 live births. The most common
causes of maternal mortality in Pakistan, as in many developing countries, are preventable. The population of Pakistan recorded an increase of 57.2 per cent over the last 17 years i.e. 1981-98; the inter-census increase was 29.1, 52.3, and 27.9 per cent during 1972-81, 1961-72, and 1951-61 respectively. Over all the population of Pakistan has increased four times since the first population census of Pakistan in 1951 (Rawan, 2004 p.6).

According to the 1998 Population Census, the population below 15 years is 43.4 per cent of the total population, a little less than in 1981 when it was 44.5 per cent. Out of these, 14.8 per cent are below five years of age including 2.3 per cent infants. The population of persons of 65 years and above is 3.5 per cent. The population of working age group i.e. 15 to 64 years thus comes to 53.1 per cent, a little higher than half of the total population. These statistics show the rate of high dependency of the country’s population (Government of Pakistan, 2002-03 p.181).

The growth rate has dropped from 3.6 per cent in 1981 to 2.1 in 2003 in the country but even this rate is not affordable for the existing economic position of Pakistan. With the population growing at 2.1 per cent per annum and addition of 3.1 million persons every year, Pakistan is facing a formidable challenge to tackling the economic development, poverty reduction, unemployment, and lawlessness. Such a huge addition to the population for sure dilutes the results of the development efforts and put further pressure on the already scare resources of the country to cater to the needs of the population. This also imposes restraints on efforts for improving the living conditions of the population. The following table 1.1 explains population, percentage change and inter census growth rate year by year.
Table: 1.1 Population growth of Pakistan: 1901-2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>% Change</th>
<th>Inter-census growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>16576</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1911</td>
<td>19382</td>
<td>16.9</td>
<td>1.58</td>
</tr>
<tr>
<td>1921</td>
<td>21109</td>
<td>8.9</td>
<td>0.86</td>
</tr>
<tr>
<td>1931</td>
<td>23542</td>
<td>11.5</td>
<td>1.10</td>
</tr>
<tr>
<td>1941</td>
<td>28282</td>
<td>20.1</td>
<td>1.85</td>
</tr>
<tr>
<td>1947</td>
<td>32500</td>
<td>14.9</td>
<td>2.17</td>
</tr>
<tr>
<td>1951</td>
<td>33817</td>
<td>4.1</td>
<td>1.80</td>
</tr>
<tr>
<td>1961</td>
<td>42978</td>
<td>27.1</td>
<td>2.43</td>
</tr>
<tr>
<td>1972</td>
<td>65321</td>
<td>52.0</td>
<td>3.69</td>
</tr>
<tr>
<td>1981</td>
<td>84254</td>
<td>29.0</td>
<td>3.06</td>
</tr>
<tr>
<td>1998</td>
<td>132352</td>
<td>57.1</td>
<td>2.16</td>
</tr>
<tr>
<td>2002</td>
<td>145500</td>
<td>9.1</td>
<td>2.10</td>
</tr>
<tr>
<td>2005</td>
<td>152.53 million</td>
<td></td>
<td>1.9</td>
</tr>
</tbody>
</table>

4) Orient, 2005.

The inter-census average growth rate for the period 1981-1998 was 2.7 per cent per annum while the current rate of natural increase has declined to around 2.1 per cent per annum. Fertility, morality and migration are important components of population change. Immigration and emigration, at the national level are considered to be compensating for each other. In such a situation, fertility and morality remain the main constituents of growth of population. Historically, fertility has remained persistently high in areas now constituting Pakistan, but has declined steadily with improvement in income, standard of living and health facilities leading to widening the gap between fertility and morality, pushing the growth rate even higher (Government of Pakistan, Country Report 2002 pp. 4-7).
Growth and Investment

Pakistan’s economy extended its impressive expansion for the third year in a row in 2004-05 with economic growth reaching its highest annual rate of 8.4 per cent in two decades, the fifth time in the country’s history that it exceeded 8 per cent growth mark. Economic recovery has raised the perceived wealth of households and thus boosted confidence, leading to a higher consumption. The ensuing lifting of aggregate demand in turn has spurred credit demand. With increased lending, it has simulated more demand, in turn feeding back into economy activity and thus, reflecting a broader virtuous circle. Real GDP grew by 8. per cent in 2004-05 as against 6.4 per cent last year and surpassed the target (6.6 %) for the year by a wide margin. The sharp pick up in growth this year is ably supported by a stellar performance in large-scale manufacturing (15.4%), impressive recovery in agriculture (7.5%) and a strong growth in services sector (7.9%). The agriculture sector grew by 7.5 per cent in 2004-05, which is higher than actual growth of 2.2 per cent last year and a target of 4.0 per cent. Major crops, accounting for 37 per cent of agricultural value added, grew by 17.3 per cent as against a mere 1.9 per cent last year. Minor crops, which contribute 12 per cent of value addition in agriculture, grew by 3.1 per cent in 2004-05 over last year’s 2.6 per cent (Orient, 2005 p.11-12).

Agriculture

Agriculture accounts for nearly 23 per cent of Pakistan’s national income (GDP) and employs 42 per cent of its workforce. Agriculture also supplies raw material to Pakistan’s Industries, notably textile industry, the largest industrial sub-sector of the economy. Most importantly, 67 per cent of country’s populations living in rural areas are directly or indirectly dependent on agriculture for their livelihood. A stronger than
expected performance of agriculture has been one of the hallmarks of the fiscal year (FY) 2004-05 with growth reaching as high as 7.5 per cent on account of unprecedented increase in cotton production (14.6 million bales) and a near bumper wheat crop of the size of 21.1 million tons. Major corps, accounting for 37.1 per cent of agricultural value added registered stellar 12.2 per cent to overall agriculture grew by 3.1 per cent as against 2.6 per cent last year (Orient, 2005 p.12-13).

Distribution of Population in Pakistan

According to population census of 1988, 55.62 per cent of the population of Pakistan residing in Punjab, 23 per cent in Sindh, 13.41 per cent in North West Frontier Province (NWFP), 5 per cent in Baluchistan, 2.4 per cent in Federally Administered Tribal Areas (FATA) and 0.61 per cent in the federal capital, Islamabad.

Punjab is the most densely populated province with 359 persons per square kilometer followed by the NWFP with 238 persons, Baluchistan, which has over 43 per cent of landmass, is sparsely populated with 19 persons per square kilometer. The national population density has increased from 42 persons per square kilometer in 1951 to 166 persons in 1998 (Rawan, 2004 p.8).

Sindh is the most urbanized province where almost half of the population is living in urban areas. Urban proportion has almost doubled since 1951. The share of urban population increased from 17.8 per cent in 1951 to 32.5 per cent in 1998. At the national level there are 108 male for 100 female and the highest sex ratio is in Islamabad (117) followed by Baluchistan (115) and Sindh (112).

Causes of over Population in Pakistan

During the last 50 years, Pakistan’s population has increased from 33 million to
152.53 million in 2004-05. Although the current population growth rate slowed to 1.9 per cent per annum, over population has increased by 2.76 million people as compared to last year. As total labor force has also increased from 41.38 million in 2001 to 45.76 million in 2004. Of this, 99.25 million of work force is in the rural areas and 51.22 million is in the urban area.

Over population is a big obstacle in economic development of developing countries. There are many reasons of over population in Pakistan. Some are listed below:

(i) High birth rate
(ii) Decline in death rate
(iii) Improved medical facilities
(iv) Illiteracy
(v) Conservative philosophy
(vi) Joint family system
(vii) Not following the family planning

_Effects of over Population on Pakistan_

The rapid growth of population had adversely affected the economic development of Pakistan. This could be judged from the lowers per capita income, increases pressure on land and results in high landmass ratio, increases the size of younger age group with the result that dependency ratio increases, reduces the productivity of labor due to under-nourishment, increases unproductive expenditure and the volume of savings declines, acts as a barrier to capital formation and capital deficiency regards productivity growth, creates unemployment/underdevelopment and ultimately leads to wastage of human resources and poverty. It also results in increasing land fragmentation, environmental
problems, overcrowding, congestion in households, import of food etc. ‘kachi abadies’, unrest, crimes, and shortage of living space, health services, and clean water.

**Poverty Incidence in Pakistan**

In the past high population growth has significantly pushed the population below poverty line. At present almost one third of Pakistanis are living below this unhealthy line. Poverty adds to malnutrition, illiteracy, homelessness, lack of healthcare, unemployment, exploitation, social exclusion and so on (Rawan, 2004 p.9).

Like many other developing countries, Pakistan has also made significant efforts to integrate its economy with rest of the world through foreign trade and investment. The Government of Pakistan adopted a strategy for poverty reduction in 2001. The long term growth trajectory of 6 per cent per annum achieved during the last fiscal year and a real GDP growth of 8.4 per cent during the current fiscal year have improved the living standards of the people and thus, may help reduce poverty among the lowest segment of population.

The first district level Pakistan Social and Living Standards Measurement (PSLM) Survey, with a sample size of 76520 households from 5348 sample area, covering both urban and rural areas, has been conducted during the year 2004-05. The Survey indicates that most of the indicators like, major source of drinking water, the type of toilet used, and enrolment in various levels in schools show a significant improvement over the last 4 years (Orient, 2005 p.14-15).

Poverty and social sector related expenditures under the PRSP are the most important fiscal intervention to target the poor and vulnerable sections of the society; they have increased over 120 per cent in the last 4 years from 114 billion in 1999-00 to
254 billion in 2004-04. An amount of Rs. 278 billion, an increase of 9.5 per cent over the previous year, is budgeted for the current year (Orient, 2005 p.15).

The Planning Division has adopted an official poverty line based on a caloric norm of 2550 calories per adult equivalent per day. The poverty line based on minimum caloric requirements of 2550 calories per capita per day approximates per capita expenditure of Rs. 670 per month in 1989-99 and rising to Rs. 748 per month in 2000-2001.

According to the new official poverty line, it is estimated that the incidence of poverty has declined between 1986-87 to 1990-91, falling from 9 per cent. Subsequently the trend in poverty was reversed. Between 199-93 and 2000-2002 poverty increased by 5 per cent (Government of Pakistan, Economic Survey, 2002-03, pp.48-49).

The poverty incidence varies across provinces as NWFP has the highest rural poverty of 44.3 per cent as well as urban poverty 31.2 per cent. The debate on official poverty line related methodology is still going on and many people alleging the government for fudging the actual numbers in this connection. The per capita income in Pakistan in 2001 was Rs. 24200 and 30 per cent of the population was unable to meet basic food requirements of 2550 calories per day (Rawan, 2004 p.10).

**Population Size and Literacy Rate in Pakistan**

According to UNESCO, there are about one billion non-literate adults in the world today. This one billion is approximately 26 per cent of the world's adult population. Women make up two-thirds of all non-literates. 98 per cent of all non-literate live in developing countries. In the least developed countries, the overall illiteracy rate is 49 per cent.
In all developing countries, the percentage of children aged 6-11 not attending school is 15 per cent. In the least developed countries, it is 45 per cent.

Literacy rate in Pakistan is also not very much encouraging. Although there is a gradual increase in this rate for the past so many years but it is still not up to the mark. With this rate or even a bit better than the existing one Pakistan’s dream to get out of the net of poverty seems very distinct of materialization. In fact every government of the country has tried to make progress in increasing literacy rate, both male and female, but the growing population all the times nullifies these efforts.

According to the population census of 1998, the adult literacy rate has increased from 26.2 per cent in 1981 to 45 per cent in 1998. The following table shows the gradual increase in literacy rate in the country since 1981-2003.

Table 1.2: Population growth and literacy rate (1981-2005)

<table>
<thead>
<tr>
<th>Mid year</th>
<th>Total population (millions)</th>
<th>Growth rate (%)</th>
<th>Literacy rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rate</td>
</tr>
<tr>
<td>1981</td>
<td>85.10</td>
<td>3.06</td>
<td>26.2</td>
</tr>
<tr>
<td>1982</td>
<td>87.67</td>
<td>3.63</td>
<td>26.2</td>
</tr>
<tr>
<td>1983</td>
<td>90.30</td>
<td>2.99</td>
<td>27.1</td>
</tr>
<tr>
<td>1984</td>
<td>92.96</td>
<td>2.95</td>
<td>27.9</td>
</tr>
<tr>
<td>1985</td>
<td>95.67</td>
<td>2.90</td>
<td>28.8</td>
</tr>
<tr>
<td>1986</td>
<td>98.41</td>
<td>2.86</td>
<td>29.8</td>
</tr>
<tr>
<td>1987</td>
<td>101.18</td>
<td>2.82</td>
<td>30.7</td>
</tr>
<tr>
<td>1988</td>
<td>103.99</td>
<td>2.77</td>
<td>31.7</td>
</tr>
<tr>
<td>1989</td>
<td>106.84</td>
<td>2.73</td>
<td>32.7</td>
</tr>
<tr>
<td>1990</td>
<td>109.71</td>
<td>2.69</td>
<td>33.8</td>
</tr>
<tr>
<td>1991</td>
<td>112.61</td>
<td>2.63</td>
<td>34.9</td>
</tr>
<tr>
<td>1992</td>
<td>115.54</td>
<td>2.60</td>
<td>36.0</td>
</tr>
<tr>
<td>1993</td>
<td>118.50</td>
<td>2.56</td>
<td>37.2</td>
</tr>
<tr>
<td>1994</td>
<td>121.48</td>
<td>2.51</td>
<td>38.4</td>
</tr>
<tr>
<td>1995</td>
<td>124.49</td>
<td>2.47</td>
<td>39.6</td>
</tr>
<tr>
<td>1996</td>
<td>127.51</td>
<td>2.43</td>
<td>40.9</td>
</tr>
<tr>
<td>1997</td>
<td>130.56</td>
<td>2.38</td>
<td>42.2</td>
</tr>
<tr>
<td>1998</td>
<td>133.61</td>
<td>2.34</td>
<td>43.6</td>
</tr>
</tbody>
</table>
1999 | 136.64 | 2.29 | 45.0 | 3.2  
2000 | 139.76 | 2.24 | 47.1 | 4.7  
2002 | 145.96 | 2.16 | 50.5 | 3.1  
2003 | 149.03 | 2.10 | 51.6 | 2.2  
2004-05 | 152.53 | 1.9 | 52.0 | 0.4  

Sources: (1) Population Census Organization & Ministry of Planning & Development Division  
(2) Orient, 2005.

1.3 Health Situation in Pakistan

The public health sector is a priority area of Government activities. Under the commitment to achieve the goals of “Health for all” the agenda of Millennium Development Goals for health and human development is being implemented and a broad based strategy under the poverty reduction strategy paper (PRSP) to attend the imbalances in health sector has been prepared. The existing network of medical services consists of 916 hospitals, 4582 dispensaries, 5301 basic health unit (BHUs) 552 rural health centers (RHCs), 906 Maternity and child health centers (MCHs) and 289 T.B centers (TBCs). In the calendar year 2004, there was one doctor for 1359 persons, one dentist for 25107 persons, one nurse for 3175 persons and one hospital bed for 1540 persons. The total outlay on health sector is budgeted at Rs. 38.0 billion which has increased by 15.8 per cent over last year. The new health facilities added to the overall health services include construction of 45 new facilities (37 BHUs and 8 RHCs) upgrading of 40 existing facilities (27 BHUs and 13 RHCs) and addition of 3500 new doctors 1700 nurses and 17000 lady health workers (Orient, 2005 p.21).

Over the years improvement in health sector has been one of the reasons for lowering the morality rate in Pakistan. Successive regimes have made gradual increase in financial allocation for the health sector. During the year 2002-2003, the total expenditure on health was estimated at Rs. 28.814 billion showing an increase of 13.4 per cent over
last year and works out to be 0.7 per cent of GNP (Government of Pakistan, Economic Survey, 2002-2003, p.171). However, even then the present available health facilities are not impressive by any standards as compared to the developed world. Among the regional countries like India, Sri Lanka, Bangladesh, Nepal, China, Bhutan, Thailand, Philippines, Malaysia, and Indonesia, Pakistan had the highest child mortality rate i.e. 110/1000 (World Development Report, 2003). The availability of 101.6 thousand doctors, 5.086 thousand dentists (Government of Pakistan, Economy Survey, 2002-2003 p.xxi), would by no means be considered better health facilities. With a per Capita Income of $420 majority of the population has very limited access to health facilities by their own. Infant morality in Pakistan is above the average in Asia, about 50 mothers die each day from pregnancy and child birth, 300 children die of diarrhea every day, four-tenth of the population has no access to safe drinking water, one quarter of the population does not have access to health facilities (Government of Pakistan, 2001, p.5). Besides this almost 30 per cent of the population is unable to meet basic food requirements of 2550 calories per day. Nearly 39 per cent children under five years of age are malnourished, and 50 per cent of the population is without access to clean air (Government of Pakistan, 2001 p.95).

Last year Pakistan had the highest number of polio cases in the world (BBC, 2004). This was partly because vaccination campaigns were failing to reach children in remote areas. Immunization teams were only made up of male health care workers. They weren't allowed into some family homes, so now local women have been trained to administer the vaccine.

The support for this latest campaign has been huge. Government and local
authorities are urging people to vaccinate their children through public events like marches and seminars.

The WHO has tried their level best to tackle polio across the whole region simultaneously is the best way of stopping transmission of the paralyzing virus by the end of the year 2005 but in vain.

1.4 Health Communication

Health communication encompasses the study and use of communication strategies to inform and influence individual and community decisions that enhance health. It links the domains of communication and health and is increasingly recognized as a necessary element of efforts to improve personal and public health (NCI, 1989). Health communication can contribute to all aspects of disease prevention and health promotion and is relevant in a number of contexts, including (1) health professional-patient relations, (2) individuals’ exposure to, search for, and use of health information, (3) individuals’ adherence to clinical recommendations and regimens, (4) the construction of public health messages and campaigns, (5) the dissemination of individual and population health risk information, that is, risk communication, (6) images of health in the mass media and the culture at large, (7) the education of consumers about how to gain access to the public health and health care systems, and (8) the development of telehealth applications (Jackson, 1998).

For individuals, effective health communication can help raise awareness of health risks and solutions, provide the motivation and skills needed to reduce these risks, help them find support from other people in similar situations, and affect or reinforce attitudes. Health communication also can increase demand for appropriate health services
and decrease demand for inappropriate health services. It can make available information
to assist in making complex choices, such as selecting health plans, care providers, and
treatments. For the community, health communication can be used to influence the
public agenda, advocate for policies and programs, promote positive changes in the
socioeconomic and physical environments, improve the delivery of public health and
health care services, and encourage social norms that benefit health and quality of life
(Piotrow, 1997).

The practice of health communication has contributed to health promotion and
disease prevention in several areas. One is the improvement of interpersonal and group
interactions in clinical situations (for example, provider-patient, provider-provider, and
among members of a health care team) through the training of health professionals and
patients in effective communication skills (Science Panel, 1999). Collaborative
relationships are enhanced when all parties are capable of good communication.
Another area is the dissemination of health messages through public education campaigns
that seek to change the social climate to encourage healthy behaviors, create awareness,
change attitudes, and motivate individuals to adopt recommended behaviors (Maibach,
1995). Campaigns traditionally have relied on mass communication (such as public
service announcements on billboards, radio, and television) and educational messages in
printed materials (such as pamphlets) to deliver health messages. Other campaigns have
integrated mass media with community-based programs. Many campaigns have used
social marketing techniques.

The trend of rapidly expanding opportunities in health communication intersects
with recent demands for more rigorous evaluation of all aspects of the health care and
public health delivery systems and for evidence-based practices (Agency for Health Care Policy and Research, 1997). Numerous studies of provider-patient communication support the connection among the quality of the provider-patient interaction, patient behavior, and health outcomes (Roter, 1992). As the knowledge base about provider-patient interactions increases, a need becomes apparent for the development of practice guidelines to promote better provider-patient communication. Additional evidence about the process of health information-seeking and the role of health information in decision making also is needed. Health communication campaigns could benefit as well from more rigorous formative research and evaluation of outcomes. Expected outcomes should be an important consideration and central element of campaign design. As health communication increasingly involves electronic media, new evaluation approaches are emerging (Anderson, 1994). Given the critical role that communication plays in all aspects of public health and health care, health communication and outcomes research should become more tightly linked across all health communication domains.

In the past decade, there has been a rapid expansion of academic research examining mass communication and public health. This has reflected the growth of scholarly interest in the broader field of health communication, which led to the inauguration of the new journal health communication in 1989 (Atkin, 1990 P.31).

The mass media can be a powerful tool for promoting health around the world. The way that people understand health issues is important in gaining support for health promotion efforts. If people believe health to be primarily a personal rather than a social issue, then support for public policy oriented approaches will likely be limited, while approaches reinforcing the responsibility of the individual will be favored. The choice
here is politically important because health as a personal issue assigns responsibility to
individuals while the policy oriented approach sees responsibility shared more equitable
by government, the corporate world, and the individual (Atkin, 1990 p.150).

Researches have recently examined a promising approach to health promotion
that emphasizes an entertaining style of presentation. The entertainment-education
strategy amounts to internationally inserting educational content in entertainment
messages, whether in radio, television, print media, or popular music. This strategy thus
combines two forms of mass media-entertainment and information campaigns (Atkin,

A major goal of the agencies sponsoring the media and health conferences is the
creation of a shared agenda for cooperation between the mass media and public health
professionals in addressing the issues and challenges of communicating health
information to the public. There are a number of complexities and conflicts involved in
this process, due to differences in objectives, philosophies, conventions, and capabilities
between the two fields; there are also remarkable diversity and competition within the
public health community, and the “mass media” are far from monolithic, with a wide
variety of channels, outlets, and formats.

Further, there is a diverse array of health topics of compelling interest and public
need. Health messages are generally complicated, and the media most frequently offer
too limited time or space to cover the subjects adequately. The health community has
traditionally relied on free public service campaigns to reach the population. Public
health organizations are experimenting with paid advertising, more sophisticated public
relations and media advocacy practices, and cooperative efforts with private companies
and entertainment producers to disseminate their messages. At the same time, commercial advertisers are aggressively promoting health-related products through the media, and they are increasingly relying on health claims to persuade consumers (Atkin, 1990 p.38).

A report summarizing the discussions at the conference (Mass Media and Health: Opportunities for Improving the Nation’s Health, 1990) proposes the following recommendations for the public health community.

1. Educate public health specialists regarding the opportunities and the restrictions in using the media to communicate health messages to the public, including the multiple facets (e.g., public service and paid advertising, news, public affairs, and entertainment) and differences between channels (e.g., TV, radio, newspapers, magazines).

2. Identify common interests among health organizations (such as specific health issue or target audience) and form informal coalitions to increase “clout” with the media.

3. Seek media cooperation at all levels, from corporate leadership to individual reporters, through personal contacts; establish and nurture contacts over time, not just in regard to a specific health need; and seek their involvement in program planning stages to interest them in the cause of problem, not just the message.

4. Increase outreach efforts to the minority media to convince them of the compelling needs of their audience for health information, and the interest of their audience in health.

5. Work with school of journalism and professional associations to provide science and health training to journalists, and to develop guidelines for reporting health and science issues, thus increasing the depth of understanding, raising the level of skepticism, and
refining the judgment with which journalists prepare stories about these complex issues.

6. Establish mechanisms such as a computer bulletin board to provide journalists with quick access to health spokespersons, background information, and the positions of pertinent health agencies on specific issues.

7. Recognized the conflicts as well as the convergences in interests between public health and the mass media; set clear, realistic expectations for health programs involving the media, and solicit broad participation by the media and support from corporations that advertise through the media.

8. Develop guidelines for collaboration between industry and the health community to direct and safeguard cooperative advertising and other media ventures, and develop guidelines for promoting product health claims.

9. Plan data collection and program tracking for all media efforts, to increase what is known about the effects of communicating about health through the media.

10. Support the establishment of media resource centers to share effective media materials, including PSAs; to maintain contact with journalists; and to share advice and case studies illustrating effective media strategies.

11. Educate the public to be informed consumers of health information in the mass media, including product health claims, conflicting news reports, and the complexities of fast-breaking scientific findings.

A recurring theme expressed by media representatives at the conference is the need to recognize that the mass media are not obligated to educate the consumers about health. It is incumbent on the public health community, as one of many interests groups
seeking cooperation of the media, to understand the motivations of media gatekeepers, to convince them of the importance of covering health issues, and to initiate collaborative ventures and to explore possible avenues of cooperation in advancing the health communication agenda (Atkin, 1990 p.38-40).

1.5 A Word about Polio

Polio (Poliomyelitis) is a highly infectious disease caused by a virus. It invades the nervous system, and can cause total paralysis in a matter of hours. The virus enters the body through mouth and multiplies in the intestine. Initial symptoms are fever, fatigue, headache, vomiting, and stiffness in the neck and pain in the limbs. One in 200 infections leads to irreversible paralysis (usually in the legs). Among those paralyzed, 5%-10% die when their breathing muscles become immobilized.10

History of Polio Disease

Poliomyelitis is said to have first occurred nearly 6,000 years ago, in the time of ancient Egyptians. The evidence for this is the withered and deformed limbs of certain Egyptian Mummies. The following are the more important dates in the history of polio (Paul, 1971).

Ancient Egypt 3,700 BC

An Egyptian mummy was found with probable polio. If this was polio, cases almost certainly occurred before the lifetime of this individual.

1580-1350 BC

A young man was found with an atrophied leg, which like limb deformity that might have been cause by polio.

1209 BC
A mummy was found with an equines foot.

**Middle ages 1559**

Painting by Pieter Bruegel showing a crippled beggar, not necessarily polio although it probably did occur during this period in England.

**Eighteen century 1789**

First clinical description of poliomyelitis by British Physician Michel Underwood.

**Nineteenth century 1840-1890**

First accurate description of some scattered sporadic cases were by Heine. In 1890, first major epidemic reported in the United States by Medin (44 cases) later in 1894 Carverly recorded a similar epidemic of 132 cases in USA (Howe, 1959 pp.432-65).

**Twentieth century**

Transmission of poliomyelitis to a monkey by Land Steiner.

**1909.** Passage of the virus through a monkey by an American physician Simon Flexner (Paul, 1971).

**1920.** The development and first use of the infamous “iron lung” a metal coffin like contraption that aided respiration.

**1949.** Growth of the virus on tissue culture.

**1951.** Three types of polio virus isolated and identified.

**1954.** First large-scale trial of Salk (dead vaccine) or IPV by injection.

**1958.** First general use of Sabin (live attenuated vaccine) or OPV by mouth.

**Description of Poliomyelitis**

The poliomyelitis is an RNA containing virus and is a sub type of Enterovirus.
The virus is 27 nm in diameter; the virion is in the form of an icosahedron with 32 protein capsomeres, enclosing an RNA core which constitutes 25 to 30 percent of the particle. The only animals readily susceptible are the primates, though it has been possible to adapt some strains to grow in small rodents and chick embryo. Polio virus are most easily isolated and cultivated in vitro in tissue culture of monkey, primary human amnion or HELA cell (Cruickshank et al., 1973).

**Serosotypes (Antigenic characters)**

In 1949, three immunological types of polio virus have been identified by neutralization tests carried out in the monkey or in the tissue culture.

**Types I.** The Brunhilde type (named after a female chimpanzee from which this virus was first isolated).

**Types II.** Which include the rodent-adapted strain or Lansing (named after a patient from Lansing, Michigan).

**Types III.** The Leon strain (named after a patient in California) (Howe, 1959; Cruickshank et al., 1973).

The three types are antigenically distinct, but overlapping in neutralization test is not infrequent. Type I is the common epidemic type, type II is usually associated with endemic infection while type III occasionally cause epidemic. Type II virus has been eradicated from the world in 1999, however in late 2002 and early 2003, some cases caused by M.E.F, I, a strain of type II were detected in India (Fine et al., 2004 pp.1-12).

The size, chemical and physical proportion and the resistance of the three types are all identical (Cruickshank et al., 1973). Immunity to one strain does not provide protection against the other two. For this reason, all three serotypes are included in both
IPV and OPV vaccine. The poliovirus is rapidly inactivated by heat, formaldehyde, chlorine and ultraviolet light (Melnick, 1996 pp.293-300; Field et al., 1996).

**Persons at risk of Polio**

Polio mainly affects children under five years of age. There is no cure for polio, it can only be prevented. Polio vaccine, given multiple times, can protect a child for life.

**Impact of the Global Polio Eradication Initiative**

From the launch of the global initiative in 1988, to the eradication target date of 2005, five million people-mainly in developing world-who would otherwise have been paralyzed, will be walking because they have been immunized against polio.11 By preventing a debilitating disease, the Global Polio Eradication Initiative (GPEI) is helping reduce poverty, and is giving children and their families a greater chance of leading healthy and productive lives.

By establishing the capacity to access children everywhere, almost two billion children worldwide have been immunized during national immunization days (NIDs), demonstrating that well-planned health interventions can reach even the most remote, conflict-affected or poorest areas. In 2002 alone, 500 million children were reached as part of these efforts in 93 countries.

Planning for NIDs provides key demographic data - “finding” children in remote villages and households for the first time, and putting them on the map for future health services.

Supplemental immunization program along with the routine immunization activities have been the main strategy for stopping poliovirus transmission in Pakistan. With low routine immunization coverage and high growth rate, closely spaced
vaccination campaigns are major interventions for Polio eradication. Two rounds of NIDs, with fixed site strategy, started in 1994. In 1988-99, house-to-house strategy was adopted. Since 1994, a total of 46 rounds of NIDs and SNIDs have been conducted (UNICEF, 2004 p.73).

In most countries the Polio Eradication Initiative has expanded the capacity to tackle other diseases by building effective disease-reporting and surveillance systems, training epidemiologists and establishing a global laboratory network.

Routine immunization services have been strengthened by bolstering the cold chain, transport and communications systems for immunization. At the end of 2001, 90% of polio-funded staff was already involved in planning and implementing routine immunization and surveillance services.

In 2002 alone, 42 countries administered vitamin A during polio immunization activities. Since 1988, over 1.2 million childhood deaths have been prevented through provision of Vitamin A during polio SIAs. A recent study suggests that in total, one million childhood deaths have been prevented since 1998 through the provision of vitamin A during NIDs.

On average, one in every 250 people in a country has been involved in polio immunization campaigns. Tens of millions of volunteers have been trained to deliver OPV and vitamin A, fostering a culture of disease prevention.

Through the synchronization of NIDs, many countries have established a new mechanism for coordinating major cross-border health initiatives aimed at reaching all people - a model for regional and international cooperation for health.
The Public Health Agency of Canada (PHAC) continues to monitor the current global trends of polio. Since its inception in 1988, the UNICEF-led Global Polio Eradication Initiative (GPEI) has significantly reduced the global transmission of polio. The initiative has seen the number of cases of polio reported globally fall from 350,000 in 1988 to 784 cases in 2003. Furthermore, the virus was endemic (constantly present) in only 6 countries in 2003, compared to 125 countries in 1988.

However, as of January 25, 2005, a total of 1,212 cases of polio were reported globally for 2004. This figure represents a 55% increase over the 784 cases reported in 2003. The increase is attributed to a decrease in immunization activity in sub-Saharan Africa. In November 2004, the World Health Organization reported that, in 2004, sub-Saharan Africa experienced epidemic poliomyelitis when, from August 2003 to July 2004, the state of Kano, Nigeria, halted immunization against the disease, and some neighboring countries had low routine immunization coverage. As a result, several African countries (Benin, Chad, Burkina Faso, Cameroon, the Central African Republic, Côte d'Ivoire, Ghana, Guinea, Mali, Togo, Sudan and Botswana in southern Africa) that had been polio free, reported imported cases of polio - all linked to wild polio-virus circulating in Northern Nigeria. Polio has since become re-established (that is, continued circulation for more than 6 months) in four of these countries - Sudan, Cote d'Ivoire, Chad and Burkina Faso (Travel Medicine Program, 2005).

Of the six remaining countries where polio remains endemic (constantly present), are Nigeria, India, Pakistan, Niger, Afghanistan and Egypt. The fragility of that progress was again evidenced by the further spread of the polio outbreak in west and central Africa to 14 previously polio-free countries, resulting in 257 of the 1262 cases reported
Details of AFP global case count, number of Polio cases in Pakistan 1985-2005, Polio Eradication Update, Pakistan 2001-05 and district wise percentage of Immunization of Children in NWFP1998 are given in the following tables.

Table: 1.3 Detailed Acute Flaccid Paralysis (AFP) and polio, September 20, 2005

Global case count

<table>
<thead>
<tr>
<th>Countries (Global cases of poliovirus)</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yeman (importation)</td>
<td>469</td>
</tr>
<tr>
<td>Nigeria (endemic)</td>
<td>445</td>
</tr>
<tr>
<td>Indonesia (importation)</td>
<td>236</td>
</tr>
<tr>
<td>India (endemic)</td>
<td>30</td>
</tr>
<tr>
<td>Sudan (re-established transmission)</td>
<td>26</td>
</tr>
<tr>
<td>Pakistan (endemic)</td>
<td>17</td>
</tr>
<tr>
<td>Ethiopia (importation)</td>
<td>16</td>
</tr>
<tr>
<td>Angola (importation)</td>
<td>7</td>
</tr>
<tr>
<td>Niger (endemic)</td>
<td>4</td>
</tr>
<tr>
<td>Afghanistan (endemic)</td>
<td>4</td>
</tr>
<tr>
<td>Mali (importation)</td>
<td>3</td>
</tr>
<tr>
<td>Somalia (importation)</td>
<td>2</td>
</tr>
<tr>
<td>Chad (re-established transmission)</td>
<td>1</td>
</tr>
<tr>
<td>Cameroun (importation)</td>
<td>1</td>
</tr>
<tr>
<td>Eritrea (importation)</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>1262</td>
</tr>
</tbody>
</table>

Source: 1) http://Global case count.html
Table: 1.4 Number of Polio cases in Pakistan 1985-2005

<table>
<thead>
<tr>
<th>Confirmed polio cases in the Year</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>2159</td>
</tr>
<tr>
<td>1986</td>
<td>643</td>
</tr>
<tr>
<td>1987</td>
<td>1214</td>
</tr>
<tr>
<td>1988</td>
<td>935</td>
</tr>
<tr>
<td>1989</td>
<td>811</td>
</tr>
<tr>
<td>1990</td>
<td>777</td>
</tr>
<tr>
<td>1991</td>
<td>1144</td>
</tr>
<tr>
<td>1992</td>
<td>1044</td>
</tr>
<tr>
<td>1993</td>
<td>1803</td>
</tr>
<tr>
<td>1994</td>
<td>527</td>
</tr>
<tr>
<td>1995</td>
<td>421</td>
</tr>
<tr>
<td>1996</td>
<td>408</td>
</tr>
<tr>
<td>1997</td>
<td>1331</td>
</tr>
<tr>
<td>1998</td>
<td>341</td>
</tr>
<tr>
<td>1999</td>
<td>558</td>
</tr>
<tr>
<td>2000</td>
<td>199</td>
</tr>
<tr>
<td>2001</td>
<td>119</td>
</tr>
<tr>
<td>2002</td>
<td>90</td>
</tr>
<tr>
<td>2003</td>
<td>103</td>
</tr>
<tr>
<td>2004</td>
<td>44</td>
</tr>
<tr>
<td>2005</td>
<td>17</td>
</tr>
</tbody>
</table>


Table: 1.5 Polio Eradication Update, Pakistan

<table>
<thead>
<tr>
<th>Provinces</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punjab</td>
<td>45</td>
<td>11</td>
<td>25</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Sindh</td>
<td>8</td>
<td>39</td>
<td>29</td>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>NWFP</td>
<td>32</td>
<td>33</td>
<td>33</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Balochnistan</td>
<td>15</td>
<td>7</td>
<td>15</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>--------------</td>
<td>----</td>
<td>---</td>
<td>----</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>AJK</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>FANA</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Islamabad</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pakistan</td>
<td>120</td>
<td>90</td>
<td>103</td>
<td>53</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: 1) WHO/PEI, NWFP.

Table: 1.6 District wise percentage of Immunization of Children in NWFP 1998.

<table>
<thead>
<tr>
<th>District</th>
<th>% of immunized children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbottabad</td>
<td>76.95</td>
</tr>
<tr>
<td>Bannu</td>
<td>68.83</td>
</tr>
<tr>
<td>Bata Gram</td>
<td>52.54</td>
</tr>
<tr>
<td>Buner</td>
<td>68.05</td>
</tr>
<tr>
<td>Charsadda</td>
<td>78.04</td>
</tr>
<tr>
<td>Chitral</td>
<td>86.02</td>
</tr>
<tr>
<td>D.I.Khan</td>
<td>58.55</td>
</tr>
<tr>
<td>Dir Lower</td>
<td>77.41</td>
</tr>
<tr>
<td>Dir Upper</td>
<td>64.01</td>
</tr>
<tr>
<td>Hangu</td>
<td>66.05</td>
</tr>
<tr>
<td>Harripur</td>
<td>73.02</td>
</tr>
<tr>
<td>Karak</td>
<td>75.04</td>
</tr>
<tr>
<td>Kohat</td>
<td>60.74</td>
</tr>
<tr>
<td>Kohistan</td>
<td>44.68</td>
</tr>
<tr>
<td>Lakki Marwat</td>
<td>66.03</td>
</tr>
<tr>
<td>Malakand</td>
<td>65.03</td>
</tr>
<tr>
<td>Mansehra</td>
<td>71.01</td>
</tr>
<tr>
<td>Mardan</td>
<td>79.07</td>
</tr>
<tr>
<td>Nowshera</td>
<td>78.08</td>
</tr>
<tr>
<td>Peshawar</td>
<td>83.00</td>
</tr>
<tr>
<td>District</td>
<td>Rate</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
</tr>
<tr>
<td>Shangla</td>
<td>57.07</td>
</tr>
<tr>
<td>Swabi</td>
<td>75.00</td>
</tr>
<tr>
<td>Swat</td>
<td>73.43</td>
</tr>
<tr>
<td>Tank</td>
<td>53.09</td>
</tr>
<tr>
<td>NWFP over all</td>
<td>68.78</td>
</tr>
</tbody>
</table>


To halt polio transmission by the end of 2005, the Global Polio Eradication Initiative has outlined an intensified plan based largely on Synchronized National Immunization Days.

Neighboring countries, reporting cases of polio, will coordinate their immunization activities and immunize every child under the age of 5 regardless of previous immunization status. SNIDs are conducted in two rounds, one month apart, to ensure that population immunity is sufficiently high to stop any further transmission of wild poliovirus and to protect against further importations.

**Future Benefits of Polio Eradication**

Once polio is eradicated, the world can celebrate not only the eradication of a disease but the delivery of a global public good - something from which every person, regardless of race, sex, ethnicity, economic status or religious belief, can benefit for all time, no matter where they live.

The humanitarian benefit is tremendous, as between 2002 and 2040; over ten million new cases of polio worldwide would manifest themselves. Additionally, the savings of polio eradication are potentially as high as US$ 1.5 billion per year - funds that
could be used to address other public health priorities (http://www.who.int/mediacentre/factsheets/fs114/en/).

Overall, since its 1988 launch, the GPEI has achieved strong progress, reducing the incidence of polio by more than 99 per cent, to 1,265 cases in 2004. The fragility of that progress was again evidenced by the further spread of the polio outbreak in west and central Africa to 14 previously polio-free countries, resulting in 257 of the 1,265 cases reported world wide. In six of the 14 countries, population immunity levels were not high enough to prevent the re-establishment of transmission of the imported wild poliovirus (Burkina Faso, Central African Republic, Chad, Cote d’Ivoire, Mali and Sudan), requiring additional campaigns (WHO, 2005 p.5).

**GPEI Plan 2004-2008**

The Global Polio Eradication Initiative plan for 2004-2008 will replace the existing GPEI plan 2001-2005 and also provide key stakeholders longer timeframe for planning to ensure they can provide multi-year support through global certification.

**1.6 Understanding Effects Research/Study**

There is a surprisingly long tradition of effects-based audience research, and an examination of it reveals a significant body of different approaches. All have in some way sought to examine the effects of media output on their audiences and all have argued that the media influence their audiences in some way. Effects work is also characterized by its attempt to identify a particular aspect of the media as the agent of effects, it might be a particular aspect of the media content or form which causes the effect, or the media technology through which media output is received (Taylor, 1999 p.157-58). The ability
to do research on the effects of mass communication was of enormous importance in developing theories to explain their role and significance in contemporary society. As investigators made use of increasingly sophisticated techniques and procedures, they began to come up with research findings that required them to modify earlier explanations of how, and to what extent, mass communication had effects on individuals and society. Research within this framework of science and in a large-scale sense began in the late 1920s (Lowery, 1988 p.31).

McLeod et al. (1991 pp.235-66) argue that effects research began as far back as the late nineteenth century and early twentieth century when observers of society, some of whom, out of concern about the effects of the press, drew up early plans for empirical research. They note Max Weber, Walter Lippmann and John Dewey as social reformers of this kind (1991, p.239). However, most commentators begin their version of the effects tradition in the 1930s. In David Morley’s historical account of effects research, or what he calls the ‘dominant conceptual paradigm’ in audience studies, he argues that it was originally formed in response to the Frankfurt School’s ‘pessimistic mass society thesis’ (1992, p.45). The Frankfurt School argued that new industrialized societies, dominated by capitalist scientific rationality, had created the masses: uncritical, gullible hordes that were incapable of rational critical thought. The work of the capitalist industries had made the masses vulnerable and ripe for the domination of totalitarian dictatorship as they had witnessed in Germany in the late 1920s and early 1930s. Likewise, people were vulnerable to the dangerous, pro capitalist products of the culture industries, because the masses were likely to soak in their political sentiments. It was out of this kind of analysis of the culture industries that the effects school in the United States began to develop its
conception of the media as potentially all-powerful. McQuail argues that the early history of effects theory, from the turn of the century to the end of the 1930s was dominated by a belief that the media, 'could be immensely powerful' (1994, p. 328). Experimental researchers of the time, whose surveys were heavily influenced by social psychology, worked in an atmosphere where advertising and the political propaganda that maintained the communist regime in Russia as well as the fascist states in Italy and Germany, seemed to be exactly influential. It was in this context that the 'hypodermic' model was developed, a model that marks the popular branch of the stimulus-response idea which lay beneath most of the writing on audiences during this period. This strain of effects research argued that repressive ideas and ideologies could be injected straight into the masses and that direct and even responses could be expected from all 'mass' members as they act upon those ideas.

However, American empirical researchers at work during the 1930s began, in what was to become the second phase in effects research, to include that the stimulus-response was too simplistic. It proposed an overly unmediated and direct relationship between the media their audience and its assumption that other social structures, such as the opinions of the family and peer group members, had no effect on audience was naive. Empirically driven researchers set out on a wide range of different projects which mostly assessed the effects of the content of the media on selected audience groups. For example, researchers analyzed both the use of the media to persuade and propagandize and the possible destructive effects of the media for causing delinquency and violence. Alongside this there was a growth in work on the power of political campaigns to influence voting decisions (Lazarsfeld et al., 1944; Berelson et al., 1954). The growth and
development of empirical research led to refinements and developments of the research methods that were used. Increasingly new and different variables were introduced into the research so that a whole range of factors was taken into account in the kinds of effect that were measured: differences in social and psychological characteristics of those tested, and types of social and environmental factors were also considered. But it was Lazarsfeld et al.’s work on the ‘primary group’ (1944) that eventually persuaded his body of researchers to reject the hypodermic model. In this research conducted on political campaigns it was concluded that there was scant evidence to suggest that people actually changed their views as a result of the media’s influence. The opinions of the primary group, they argued, were a more influential factor on the political choices individuals made at polling times, and this group acted as a type of ‘safeguard’ from direct media effects. In 1955 Katz and Lazarsfeld developed the ‘two-step flow’ model of communication, where they demonstrated the role of ‘opinion leaders’ and interpersonal relationships in the mediation of media messages.

Lazarsfeld and Katz’s findings also had an influence on the work of Klapper, whose ‘limited effects’ work is often thought of as encapsulating the mood of researchers at the end of this second phase. In the Effects of Mass Communication (1960) he argued that there was a series of mediating factors which impinged on media effects: selective exposure, perception and retention of media messages, as well as group processes and norms, including factors such as opinion leadership. By the end of this second phase of effects research in the late 1950s it was concluded that the media were not the sole cause of audience effects. Instead they were considered to be one factor among others to affect change amongst audience members. Klapper’s conclusions seemed to sum up the shift in
thinking about audience effects: ‘Mass communication ordinarily does not serve as a necessary and sufficient cause of audience effects, but rather functions among and through a nexus of mediating factors and influences’ (1960, p.8). The media were still seen as a significant factor in shaping audience attitude and behavior, but their effects were limited.

Katz later began to develop an interest in another strand of audience research that was to pose a significant challenge to the effects school as a whole. He became interested in ‘functionalist’ approaches, which concerned themselves with the motivational reasons why individuals seek out the media and how they utilize and interpret them.

The model that was later to emerge, as ‘uses and gratifications’, posed a significant challenge to effects dominance (Taylor, 1999).

The two-step flow model has evolved gradually into a multi-step flow model that is often used in diffusion research, the study of the social process of how innovations (new ideas, practice, objects, etc.) became known and are spread throughout a social system. The main case is that of communication in the field of (mainly Third World) economic and social development, where the media are consciously applied to promote long-term change. A principal chronicler of this tradition has been Everett Rogers (1962; Rogers and Shoemaker, 1973), whose model of information diffusion envisaged four stages: information, persuasion, decision or adoption, and confirmation (McQuail 1994 p.352-64). Similarly the process and effects of Agenda Setting have been a central interest for media research and study. Two important contributions to our understanding of agenda setting theory have been articles by M.E. Mc Combs and D.L. Shaw - ‘The agenda setting function of mass media’ in Public Opinion Quarterly, 36 (1972) and
‘Structuring the “Unseen Environment”’ in the journal of Communication (Spring, 1976). Shaw followed these up with ‘Agenda setting and mass communication theory’ in Gazette XXV, 2 (1979). In their 1976 publication, the authors write, ‘Audiences not only learn about public issues and other matters through the media, they also learn how much importance to attach to an issue or topic from the emphasis the mass media place upon it. For example, in reflecting what candidates are saying during a campaign, the mass media apparently determine the important issues. In other words, the mass media set the “Agenda” of the campaign’. Thus in the view of McCombs and Shaw, the media are highly influential in shaping our perception of the world: ‘This ability to affect cognitive change among individuals is one of the most important aspects of the power of mass communication’ (Watson, 1993).

Mass Communication could also provide vital information to needy people in the many underdeveloped countries of the world, although many people in these countries have even less access to the media than the poor in the United States. An unexpected and undesired possibility is that mass communication might actually have the effect of increasing the difference of gap in knowledge between members of different social classes. This phenomenon, called the “knowledge-gap hypothesis,” was first proposed in 1970 in an article titled “Mass Media Flow and Differential Growth in Knowledge” by Tichenor, Donohue and Olien. The authors state the knowledge-gap hypothesis this way: As the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease (Severin, 1992 p.231).
Among theories of long-term media effect, the cultivation hypothesis of Gerbner (1973) remains probably the best documented and most investigated. It holds that television, among modern media, has acquired such a central place in daily life that it dominates our ‘symbolic environment’, substituting its (distorted) message about reality for personal experience and other means of knowing about the world. Television is also described as the ‘cultural arm of the established industrial order serves primarily to maintain, stabilize and reinforce rather than to alter, threaten or weaken conventional beliefs and behaviors’ (McQuail 1994 p.352-64). Gerbner points out that the average viewer watches television four hours a day. The heavy viewer watches even more. For heavy viewers, television virtually monopolizes and subsumes other sources of information, ideas and consciousness, Gerbner says. The effect of all this exposure to the same message produces what Gerbner calls cultivation, or the teaching of a common worldview, common roles, and common values. Gerbner presents research supporting cultivation theory that is based on comparisons of heavy and light television viewers. Gerbner analyzed answers to questions posed in surveys and found that heavy and light television viewers typically give different answers. Furthermore, the heavy television viewers often give answers that are closer to the way the world is portrayed on television (Servin 1992 p.249).

A theory that gives the mass media more power than many others theories is the “spiral of silence,” developed by Elisabeth Noelle-Neumann (1973, 1980 p.68). Noelle-Neumann argues that the mass media do have powerful effects on public opinion but that these effects have been underestimated or undetected in the past because of the limitations of research. Noelle-Neumann argues that three characteristics of mass
communication—its cumulation, ubiquity, and consonance—combine to produce powerful effects on public opinion.

Another view that attributes wide (if not powerful) influence to the mass media is the concept of media hegemony. Media hegemony is rooted in the ideas of Marxist economics. The concept of hegemony states that the ideas of the ruling class in society become the ruling ideas. The mass media are seen as controlled by the dominant class in society and as aiding in exerting the control of that class over the rest of society (Sallach, 1974 p.38-50).

Size of Effects

The numerous theories or research approaches that have been presented during the half-century or so of mass communication research have provided a number of different answers to the question of the size of mass communication effects. The bullet theory, one of the earliest and most simplistic notions about mass communication, attributed quite strong effects to mass communication. After some time had passed, however, this conception was replaced by the limited-effects model. Eventually, though, research began to suggest that the limited-effects model might have swung the pendulum too far in the other direction. Research on a number of topics, including the knowledge gap, agenda setting, spiral of silence, indicated that mass communication was having more than limited effects. Moreover, communication researchers have not yet come up with a unified theory that will explain the effects of mass communication. Instead the discipline has a number of theories, each attempting to explain some particular aspect of mass communication. As communication research advances, perhaps several of these mini-theories combined into one overall theory of mass communication effects (Severin

1.7 Opinion Leaders and Change Agents

The most innovative member of a system is very often perceived as a deviant from the social system, and is accorded a somewhat dubious status of low credibility by the average members of the system. This individual's role in diffusion (especially in persuading others about the innovation) is therefore likely to be limited. Other members of the system function as opinion leaders. They provide information and advice about innovations to many in the system.

Opinion leadership is the degree to which an individual is able to influence other individuals' attitudes or overt behavior informally in a desired way with relative frequency. This informal leadership is not a function of the individual's formal position or status in the system. Opinion leadership is earned and maintained by the individual's technical competence, social accessibility, and conformity to the system's norms. When the social system is oriented to change, the opinion leaders are quite innovative; but when the system's norms are opposed to change, the behavior of the leaders also reflects this norm. By their close conformity to the system's norms, opinion leaders serve as an apt model for the innovation behavior of their followers. Opinion leaders thus exemplify and express the system's structure.

Any system may have both innovative opinion leaders and also leaders who oppose change. Influential persons can lead in the spread of new ideas, or they can head an active proposition. When opinion leaders are compared with their followers, they (1) are more exposed to all forms of external communication, and thus are more cosmopolitan, (2) have somewhat higher social status, and (3) are more innovative (although the exact
degree of innovativeness depends, in part, on the system's norms). The most striking characteristics of opinion leaders are their unique and influential position in their system's communication structure: They are at the center of interpersonal communication networks. A communication network consists of interconnected individuals who are linked by patterned flows of information. The opinion leader's interpersonal networks allow him or her to serve as a social model whose innovative behavior is imitated by many other members of the system. The respect with which the opinion leader is held can be lost, however, if an opinion leader deviates too far from the norms of the system. Opinion leaders can be "worn out" by change agents who overuse them. Opinion leaders may be perceived by their peers as too much like the professional change agents and may therefore lose their credibility with their former followers.

Opinion leaders are members of the social system in which they exert their influence. In some instances individuals with influence in the social system are professionals who represent change agencies external to the system. A change agent is an individual who influences clients' innovation-decisions in a direction deemed desirable by a change agency. The change agent usually seeks to obtain the adoption of new ideas, but may also attempt to slow down diffusion and prevent the adoption of undesirable innovations. Change agents use opinion leaders in a social system as their lieutenants in diffusion campaigns.

Types of Innovation-Decisions

Innovations can be adopted or rejected (1) by an individual member of a system, or (2) by the entire social system, which can decide to adopt an innovation by a collective or an authority decision.
1. Optional innovation-decisions are choices to adopt or reject an innovation that are made by an individual independent of the decisions of the other members of the system. Even in this case, the individual's decision may be influenced by the norms of the system and by interpersonal networks.

2. Collective innovation-decisions are choices to adopt or reject an innovation that are made by consensus among the members of a system. All of the units in the system usually must conform to the system's decision once it is made.

3. Authority innovation-decisions are choices to adopt or reject an innovation that are made by a relatively few individuals in a system who possess power, status, or technical expertise. The individual member of the system has little or no influence in the authority innovation-decision; he or she simply implements the decision. There is yet a fourth type of innovation-decision that is a sequential combination of two or more of the three types we just discussed. Contingent innovation-decisions are choices to adopt or reject that can be made only after a prior innovation-decision. For example, an individual member of a social system may be free to adopt or not adopt a new idea only after his/her system's innovation-decision.

1.8 Why NWFP?

The North West Frontier Province (NWFP) has been named by its geographical position. It is situated at the north-west side of Pakistan. Till 1901 the NWFP was a division of the then Punjab province, consisting of Peshawar, Hazara, and Kohat districts. On its separation from the parent province in 1901 it's headquarter were established at Peshawar (Rawan, 2004 p.13).

It lies between 31.15 to 36.55 north Latitude and 70.05 to 74.08 east Longitude. The
total area of the province is 74521 sq. km. The total population of NWFP according to the 1998 census was 17,554,674 comprising 24 districts. Table 1.7 shows district wise (Peshawar, Nowshera, Charsadda, Mardan, Swabi, Kohat, Hangu, Karak, Bannu, Lakki Marwat, D. I. Khan, Tank, Abbottabad, Haripur, Kohistan, Batagram, Mansehra, Malakand, Chitral, Upper Dir, Lower Dir, Buner, Swat, and Shangla) area and population of NWFP according to the 1998 census.

Table: 1.7 District wise area and population of NWFP 1998 Census

<table>
<thead>
<tr>
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<td>12th</td>
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<td>1460100</td>
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<td>5th</td>
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<td>23rd</td>
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<td>D.I.Khan</td>
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<td>880666</td>
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<td>Haripur</td>
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<td>692228</td>
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<td>Kohistan</td>
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<td>Batagram</td>
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<td>Mansehra</td>
<td>4579</td>
<td>6.14</td>
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<td>1152839</td>
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<tr>
<td>Malakand</td>
<td>952</td>
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<td>452291</td>
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<td>18th</td>
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<td>Chitral</td>
<td>14850</td>
<td>19.93</td>
<td>1st</td>
<td>318689</td>
<td>1.80</td>
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<tr>
<td>Upper Dir</td>
<td>3699</td>
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<td>6th</td>
<td>575858</td>
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<td>Lower Dir</td>
<td>1583</td>
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<td>17th</td>
<td>717649</td>
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<td>10th</td>
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<tr>
<td>Buner</td>
<td>1865</td>
<td>2.50</td>
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<td>506048</td>
<td>2.85</td>
<td>15th</td>
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<tr>
<td>Swat</td>
<td>5337</td>
<td>7.16</td>
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<td>Shangla</td>
<td>1586</td>
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<td>16th</td>
<td>434563</td>
<td>2.45</td>
<td>19th</td>
</tr>
<tr>
<td>NWFP</td>
<td>74522</td>
<td>100</td>
<td>-</td>
<td>17,554,674</td>
<td>100</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Census report 1998, Islamabad, Pakistan
The reasons for selecting the NWFP for research are numerous but some of them are of vital importance. They include:

1. According to the UNICEF, NWFP is now one of the five chief reservoirs of the polio virus in the world.\(^{14}\)

2. A visible gap is found between the different socioeconomic groups in immunizing their children against polio in NWFP.\(^{15}\)

3. Due to its remote areas, it is very difficult to reach every child for polio immunization.

4. Even in 2004 and 2005 polio cases were reported in NWFP.\(^{16}\)

5. And last but not the least, the researcher belongs to the same province and hence fully aware of its geography, history, culture, media, sociology and inhabitants.

1.9 Why Polio Immunization?

The Global Polio Eradication Initiative (GPEI) is spearheaded by WHO, Rotary International, the US Centers for Disease Control and Prevention (CDC) and the United Nations Children’s Fund (UNICEF), the largest public health initiative in history, is on track to certify the world of polio free by 2005. Following more than a decade of house-to-house immunization rounds, health experts believe that polio will be eradicated from the NWFP by the end of 2005 informed Director General Health Services NWFP, Dr. Jalil-ur-Rehman, at a press briefing under the auspices of Unicef (Ali, 2005).

Even, Nascer Mohammad Khan, Federal Health Minister of Pakistan on August 12, 2005, went on to say that the polio virus would be eradicated from the country by the end of the current year (Ali, 2005).

Nigeria, India and Pakistan, which together account for more than 95 per cent of
all polio cases worldwide. Within these three countries, transmission of poliovirus is further confined to "polio hotspots," especially in five states and provinces (Kano in Nigeria, Uttar Pradesh and Bihar in India and North West Frontier Province (NWFP) and Sindh in Pakistan) that together are linked to more than 75 per cent of all new cases worldwide in 2003 (UNICEF, 2005).

Never before has commitment and effort been so focused on this final push to rid the world of polio. Not only is the world on the verge of reaching a global health goal - the eradication of polio will also leave behind a legacy of what can be achieved through an extraordinary demonstration of global cooperation. From 1988-2005, an estimated 5 million people who would otherwise have been paralyzed will be walking because of the Global Polio Eradication Initiative. Through polio eradication efforts, a significant investment has been made in strengthening health service delivery systems in many countries. Hundreds of thousands of health workers have been trained, millions of volunteers have been mobilized to support immunization campaigns, and cold-chain transport equipment has been refurbished. Moreover, the polio eradication initiative is the largest public health initiative in history and last year Pakistan had the highest number of polio cases in the world with endemic poliovirus concentrated in two key provinces and areas, NWFP and Sindh. Polio is a disease of global concern as 166 Member States, launched a global initiative to eradicate polio. In the year 2004 intensification of polio immunization campaign results in immunizing 372 million children, 171 large-scale immunization campaign in which 45 countries participated (WHO, 2005).

As long as a single child remains infected with poliovirus, children in all countries
are at risk of contracting the disease.\textsuperscript{20}

\subsection*{1.10 Why Electronic Media (Radio and TV)}

Today many households have several radios and televisions spread around the house, perhaps in bedrooms as well as in the living room, maybe in the kitchen and, in the case of radios, in cars and as part of personal stereos. Part of the reason for this growth in hardware is that television sets and radios have become increasingly cheap to buy (Rayner, 2002 p.112).

As per the latest research by Gallup, around 78 per cent of the total urban population in Pakistan watches television, out of which 13 per cent are occasional viewers and 66 per cent are regular i.e. people who watch TV at least 4 days a week. Owing to this tremendous growth, it is now considered an even more effective medium in terms of its research and impact (Orient, 2005 p.49).

As a part of its national health program in Egypt, the Communication for Healthy Living (CHL) project recently collaborated with a popular television variety show during Ramadan to promote its “Your Health, Your Wealth” campaign and generated 8.5 million calls, from viewers.\textsuperscript{21}

A UNICEF-supported television and radio campaign to fight polio has won a silver medal at this year's Effie Awards given by the advertising industry. The media campaign, developed by Ogilvy & Mather and featuring Amitabh Bachchan, came first in the services category at the annual awards, held recently in Mumbai.

"This award is a credit to the hard work of the Government of India and its polio immunization program, said Maria Calvis, UNICEF Representative in India.” The television and radio campaign has made an important contribution in raising awareness
and motivating families to get their children protected from polio."

The media blitz was launched in January 2003 for National Immunization Day. A research study in U.P. commissioned by UNICEF found that more than 94% of respondents reported that they came to a polio booth after seeing the spots on television.23

Similarly Radio with the mushroom growth of FM channels has created a community of listeners thus providing a platform to a new generation of listeners.

1.11 Why PBC and PTV?

Radio (PBC)

PBC has 24 radio stations which daily broadcast more than 300 hours of news and programs of general interest in the field of information, education and entertainment. Below are the details of radio station, broadcast frequency, and transmission hours.

Table 1.8 Pakistan Broadcasting Corporation (PBC) Stations, Frequency and Transmission hours.

<table>
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<tr>
<th>Radio Station</th>
<th>Frequency MW in KHZ FM in MHZ</th>
<th>Transmission Hours in PST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peshawar</td>
<td>540,729</td>
<td>0800-2302 hrs</td>
</tr>
<tr>
<td>Lahore</td>
<td>630,1080</td>
<td>0820-2400 hrs</td>
</tr>
<tr>
<td>Rawalpindi III</td>
<td>102 (FM)</td>
<td>0800-0530 hrs</td>
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<tr>
<td>Karachi</td>
<td>828,639</td>
<td>0810-2400 hrs</td>
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<tr>
<td>Rawalpindi I</td>
<td>1260</td>
<td>0800-2308 hrs</td>
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<td>Hyderabad</td>
<td>1008,1098</td>
<td>0810-2405 hrs</td>
</tr>
<tr>
<td>Rawalpindi II</td>
<td>792</td>
<td>1730-1830 hrs</td>
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<tr>
<td>Quetta</td>
<td>756,855</td>
<td>0810-2310 hrs</td>
</tr>
<tr>
<td>Multan</td>
<td>1035</td>
<td>0800-2400 hrs</td>
</tr>
<tr>
<td>Bahawalpur</td>
<td>1341</td>
<td>1350-2310 hrs</td>
</tr>
<tr>
<td>Islamabad</td>
<td>585,101 (FM)</td>
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</tr>
<tr>
<td>Gilgit</td>
<td>1512</td>
<td>1504-2200 hrs</td>
</tr>
<tr>
<td>Skardu</td>
<td>1557</td>
<td>1500-2200 hrs</td>
</tr>
<tr>
<td>Turbat</td>
<td>1584</td>
<td>1604-2310 hrs</td>
</tr>
<tr>
<td>D.I.Khan</td>
<td>1404</td>
<td>1355-2105 hrs</td>
</tr>
<tr>
<td>Khairpur</td>
<td>927</td>
<td>0824-2308 hrs</td>
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<td>Khuzdar</td>
<td>567</td>
<td>1715-2310 hrs</td>
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<tr>
<td>Faisalabad</td>
<td>1476</td>
<td>0800-1715 hrs</td>
</tr>
<tr>
<td>Location</td>
<td>Frequency</td>
<td>Daily Hours</td>
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<tr>
<td>-----------</td>
<td>------------</td>
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</tr>
<tr>
<td>Abbottabad</td>
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<td>1345-1915 hrs</td>
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<td>Sibi</td>
<td>1584</td>
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<td>Chitral</td>
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</tr>
<tr>
<td>Larkana</td>
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<td>0850-2404 hrs</td>
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</tr>
</tbody>
</table>

Source: 1) PBC Headquarter, Islamabad.

1. Radio has the maximum number of stations (24) in NWFP as evident from table 1.8.
2. Ninety five per cent population has access to PBC (Orient, 2005 p.47).
4. Can reach audiences who do not use the health care system.
5. Audio alone may make messages convincing.

**Pakistan Television (PTV)**

Television is the source of most broadly shared images and messages in history. It is the mainstream of the common symbolic environment into which our children are born and in which we all live out our lives. Its mass ritual shows no signs of weakening and its consequences are increasingly felt around the globe.

As compared to yesterday, Television in Pakistan has grown tremendously. The proliferation of satellite channels and cable TV networks has made it possible for a large number of Pakistanis to have access to information around the world which had hitherto remained inaccessible. The number of TV channels is expected to grow further in the coming months / years as many channels are waiting in the wings to enter this thriving field.

Below table explains PTV’s channels, access and daily telecast hours for regional and national hookup.
Table: 1.9 Accesses to PTV in Pakistan

<table>
<thead>
<tr>
<th>Channel</th>
<th>Ownership</th>
<th>Access</th>
<th>Daily Telecast</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Urban</td>
<td>Rural</td>
</tr>
<tr>
<td>PTV</td>
<td>Government</td>
<td>73%</td>
<td>43%</td>
</tr>
<tr>
<td>PTV-3</td>
<td>Government</td>
<td>67%</td>
<td>36%</td>
</tr>
<tr>
<td>PTV-World</td>
<td>Government</td>
<td>52%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: 1) Orient, 2005.

1. Registered TV sets 12.28 million (estimated) (55 per cent) as per TV Audience report 2004 by Gallup. Segregated results show that 77 per cent of the urban households and 44 per cent of the rural households own TV (Orient, 2005 p.46).

2. It is used more than any other mass medium amongst the currently married women.

3. Visuals as well as audio make emotional appeals possible, easier to demonstrate a behavior.

4. Can reach low-income and other audiences not as likely to turn to health sources for help.

5. It gives messages in national and regional languages.

6. Its symbolic modeling is very close to reality.

7. It is assumed as more credible due to its visual characteristic.

8. It is a non-literary media.

1.12 Why parents?

In the past few decades, parenting initiatives within the electronic media are expanding and there has been an explosion of information and advice about child-rearing in the mass media. In nearly every category of mass media, from books and magazines to television and the internet, messages about child-rearing are being directed to parents to an unprecedented degree.

Yet little attention has been given to the quantity or quality of those messages, or
to their impact on parents or parenting. Similarly, little attention has been given to the opportunities offered by the media to have greater and more positive impact on parents at a time when, by all accounts, such support is badly needed.

To address this gap in our understanding, the Center for Health Communication at the Harvard School of Public Health, with funding from The John D. and Catherine T. MacArthur Foundation, undertook a study of the role of the mass media in parenting education. Its goal was to pull together existing information, to offer some initial observations, and to catalyze further research, reflection, discussion, consensus, and action.

In this two-year project, the Harvard Center for Health Communication gathered and analyzed data about the role of the mass media in parenting education from a variety of sources, including research studies, press reports, and media project samples and descriptions. Also, over 200 interviews were conducted with key professionals in such fields as media policy, historical research, communication research, health care, funding administration, health promotion, parent education, child advocacy, journalism, publishing, broadcasting, media economics, anthropology, sociology, advertising, and public relations. A group of eight leaders served as expert advisors, and a number of other interviewees offered substantial information and advice.

The scope of the project was defined to include media activities for which parents and others in parenting roles were specifically designated as a target audience. Projects were not included for which the primary audience was children, although it was clearly acknowledged that parents are an important audience for children's media, as monitors
and mediators of their children's experience, as the ultimate target of much of the advertising and many of the messages in children's media, and as the family members most likely to experience and influence any media effects on children's behavior. It was further acknowledged that some children's and family programs, such as Mr. Rogers' Neighborhood, offer powerful models for healthy care giving behavior, and that parents sometimes report watching them for this very purpose. Finally, it was acknowledged that the presence of the media profoundly influences family patterns of interaction, by virtue of the quantity of their daily consumption by children and parents, alone and together, and by their presence as "background noise" in family life (Simpson, 1998 p.1-2).

Focusing, then, on messages directed to parents regarding the polio immunization of their children it is necessary to take media initiatives in parenting education to a higher level, one that influences underlying social and parental attitudes, reaches broader audiences, sets priorities around particular social needs, engages in more self-reflection and analysis, taps existing knowledge more effectively, and addresses consciously and comprehensively the critical needs of children, parents, and families.

1.1.3 Explaining Media Campaign

There are numerous definitions of campaigns (Rogers & Storey, 1987), often building on standard dictionary definitions that refer to a series of operations in war. Applied to public health, communication campaigns can be defined as an integrated series of communication activities, using multiple operations and channels, aimed at populations or large target audience, usually of long duration, with a clear purpose (Atkin, 1990 pp.129-130).

The situation in which a number of media are used in an organized way, to
achieve a persuasive purpose with a chosen population. The most common examples are found in politics, advertising, fund raising, and public information for health and safety. Media campaigns tend to have the following additional characteristics: they have specific and overt aims and a limited time span and are thus open to assessment as to effectiveness; they have authoritative (legitimate) sponsorship, and their purposes tend to be in line with consensual values and with the aims of established institutions, and the population targeted for influence is usually large and dispersed (McQuail, 1987).

These characteristics of campaigns incorporate all components of definitions proposed by various communications scholars (Atkin, 1981; Paisley, 1981; Rogers & Storey, 1987; Solomon, 1982). These characteristics also define campaigns to market products. Yet, there are distinct differences between commercial advertising and public health campaigns as they are normally designed (Atkin, Charles 1990 p.130).

Campaigns and campaigners are preoccupied with, and judged largely in terms of, their effects. The measurement and analysis of such effects have constituted both an important problem and a source of sponsorship for mass communication research (Sullivan, 1994 p.35).

Health promotion campaigns have found the mass media to be equally effective for persuasion. Social influence campaigns are familiar to mass media consumers and persuasion scholar alike. Beginning with the propaganda research of the 1940s, persuasion research has examined the effectiveness of several theories that have been applied in mass media campaigns (Stiff, 1994 p.230).

**Necessary Conditions for Effective Campaign**

A short sequence of steps, simple to spell out but difficult to accomplish in
practice, must be followed for public health campaign to be maximally effective. The seven steps are (1) develop and use high quality messages, source, and channels; (2) disseminate to the target audience; (3) gain and keep the attention of the audience; (4) encourage favorable interpersonal communication about the issue; (5) cause changes in behaviors of individuals, along with awareness, knowledge, opinions, attitudes, feelings, normative beliefs, intentions, or skills; (6) cause broader societal changes; (7) obtain knowledge of effects through summative evaluation (Atkin, 1990 p.132).

1.14 Explaining HSE and LSE

There is no uniquely correct way of measuring the extent of poverty (Rural Development, 1975 p.19). There is no universally accepted poverty line; it varies from country to country depending on the norms of income and expenditure patterns and availability of data. Expenditure based poverty line is drawn with two elements. First, the expenditure necessary to buy a basket of foodstuff which fulfills the minimum standard of nutrition, normally expressed in terms of caloric intake (this is also called destitution line); second, in addition to food, the expenditure needed to avail the basic amenities of life, like housing, education and health (Eight five years plan, 1993-95).

A number of studies have been undertaken to draw the poverty line in Pakistan (Irfan & Amjad, 1994). These studies are based on the Household Income and Expenditure surveys periodically conducted by the Federal Bureau of Statistics. On the basis of the Income-Expenditure Survey of 1990-91 with a minimum nutrition of 2550 calories per day the poverty line for 1990-91 works out at Rs. 670 per person per month (Cost of minimum nutrition of 2550 calories per day for rural sector in 1979 was estimated at Rs. 109 per capita per month. The figures of Rs. 670 per person has been compiled by
converting this into national level by using the rise in food prices index up to the year 1990-91) with this benchmark, the number of pollution below poverty line in 1990-91 comes to 29 percent.

The Planning Division has adopted an official poverty line based on a caloric norm of 2550 calories per adult equivalent per day. The poverty line based on minimum caloric requirements of 2550 calories per capita per day approximates per capita expenditure of Rs. 670 per month in 1989-99 and rising to Rs. 748 per month in 2000-2001.

According to the new official poverty line, it is estimated that the incidence of poverty has declined between 1986-87 to 1990-91, falling from 9 per cent. Subsequently the trend in poverty was reversed. Between 1993-94 and 2000-2002 poverty increased by 5 per cent (Government of Pakistan, Economic Survey, 2002-03, pp.48-49).

Poverty is basically a reflection of dispossession or deficiency in resources that prevents participation of some sections of a society initially in growth process and consequently in sharing economic gains and thus inhibits them from realizing a reasonable standard of living. This also results in income inequality. In this research work, the word "Poverty" is thus manifested in low income, malnutrition and high incidence of diseases, illiteracy and poor living condition. Keeping in view this explanation and the factual position on ground the researcher has categorized the locale under study as high socioeconomic group and low socioeconomic group. Moreover as the researcher has taken the position that social standing is basically governed by one's economic status in society, therefore, economic factor would be a dominant one. That dominant factor of economies in this research work would not be divided according to
1993 GNP per capital, calculated using the World Bank Atlas method because that calculation is for developed nation and Pakistan has been placed in low-income according to that classification by income. These groups: low income, $ 695 or less (Rupees 41700, per year), Lower-Middle income $ 696-785 (Rupees 41760-47100 per year), Upper-Middle Income $2786-8625 (Rupees 167160-517500 per year) and high income $ 8626 or more (Rupees 517560 and above) (The World Bank, 1995 p.394).

1.15 Significance of the Study

This study would help in understanding effects of electronic media (PBC & PTV) polio immunization campaign at different stages in the process of innovation-decision which in turn would benefit in planning effective communicative strategy for eradicating diseases by achieving 100 per cent polio immunization practice.

The study will help the researcher in knowing the effects of the electronic media (PBC & PTV) polio immunization campaign on parents having HSE and LSE status in urban as well as rural areas of NWFP and to identify the possible reasons of knowledge-gap among them.

The study will help the future researchers to know the impact of social relationships besides social status, economic position, preexisting attitudes in individual’s personal decision making process.

This study will go a long way in future use of proper communication strategy for diffusion of immunization messages and other such important innovations crucial for the development of society of the province under study in particular and other communities in general.

The study would benefit the policy makers in planning effective communicative
strategy for achieving the desired goal of eradicating the diseases by enhancing the practice of immunization.

Findings of this study may enable government and non-governmental organizations (NGO's) launching or sponsoring diffusion of innovations in the area to have better understanding of social system and selecting proper communication channels and messages for reaching and influencing the target groups.

1.16 Rationale of the Study

A disease which once crippled children in 125 countries around the world is now endemic in only six - Nigeria, India, Pakistan, Niger, Afghanistan and Egypt. Polio is on course to become the second disease, after smallpox, to be wiped from the face of the earth.

The basic question here is why Pakistan is far behind to achieve the optimum state of polio immunization innovation. Why a knowledge-gap in the practice of polio immunization exists amongst the divergent socioeconomic status in NWFP, Pakistan.

1.17 Significance of the Period (1994-2005)

In 1988, the forty-first World Health Assembly, consisting then of delegates from 166 Member States, launch a global initiative to eradicate polio by the end of the year 2000. In 1994, the World Health Organization (WHO) Region of the Americas (36 countries was certified polio-free, followed by the WHO Western Pacific Region (37 countries and areas including China) in 2000 and the WHO European Region (51 countries) in June 2000.Widely endemic on five continents in 1988, polio in 2005 is now found only in parts of Africa and South Asia.24

Since its inception in 1988 the Global Polio Eradication Initiative has cut the
transmission of polio by more than 99 percent; In 2004, the world confirmed fewer than 1300 cases of polio.

The Americas were certified polio-free in 1994. The Western Pacific was certified polio-free in 2000. Europe, composed of 51 countries, was certified polio-free in June 2002.

There are now only six countries that have never stopped polio - Afghanistan, Egypt, India, Nigeria, Niger and Pakistan.

Asian nations, polio transmission is lower than ever. But Africa faces a greater challenge. From 2004, an outbreak spreading from northern Nigeria reached 14 previously polio-free countries by mid-year and re-established virus transmission in 6 countries. These included Cote d'Ivoire and Sudan, where civil unrest and displaced people are hampering access to children.

Polio eradication continues to receive the highest level of political attention. The G8 Summit Declaration promised to provide the funding to stop transmission of the virus. The African Union adopted a decision promising to “Kick Polio out of Africa”. The Organization of the Islamic Conference passed a landmark resolution asking all States to provide the necessary resources to end polio.

With only six polio endemic countries--Nigeria, India, Pakistan, Niger, Afghanistan and Egypt. left in the world, polio transmission could be stopped by end 2005. The world could then be certified polio-free by end-2008.
1.18 Statement of the Problem

The purpose of this study is to understand the effects of electronic media (PBC and PTV) polio immunization campaign on parents having divergent socioeconomic status at various stages i.e. knowledge (awareness), persuasion (attitude formation and change), decision (adoption or rejection) and confirmation of innovation decision process of health communication in rural and urban areas of NWFP, Pakistan.

1.19 Objectives of the Study

Keeping in view the overall study, the following main objectives are formulated;

1. To find out the cognitive (attention and knowledge), affective (relating to feelings, moods and attitudes) and co-native (behavior, activity and implementation) level of parents regarding polio immunization in NWFP.

2. To know the effectiveness of electronic media for the dissemination of polio immunization campaign in NWFP.

3. To explore the knowledge-gap between HSE and LSE.

4. To identify the reasons behind rejecting the polio immunization innovation by parents in NWFP.

5. To document the effects of media (other than electronic) in providing awareness regarding polio immunization.

6. To formulate recommendations about usage of proper communication channel(s) for successful diffusion of value laden innovations in NWFP.

1.20 Organization of the Thesis

Chapter 1, Introduction, describes the premise of the whole study. Started from its basic assumption of communication's role in present era of technological advancement
and media development, this part of the study explained various concepts widely used in media studies and of course in this research work.

Chapter II, Literature review, emphasizes the importance of organizing the researcher thinking and referring relevant work done by the scholars of social science, media studies and health communication. Efforts have been made to acquaintance the present study with a logical support and proper references.

Chapter III, Theoretical framework, discusses many of the theories relevant to the study. In this chapter various theories of effects model of mass media are crafted and stitched in such a way that it provide a methodical theoretical foundation to the research. Models of media effects and health communication are also discussed in this chapter. Major variables, Operationalization of the concepts, theoretical statements and hypotheses are also explained.

Chapter IV, Research methodology, elaborated techniques and research designs to carry out the study. Beginning from framing the research questions, this chapter has covered important topics like research design, universe, target group, sampling techniques, sample frames, sampling methods, sources of data and collection, pilot study, questionnaire preparation it's pre-testing and distribution.

In Chapter V, Data analysis and findings, the data has been analyzed scientifically using statistical methods and tests. On the basis of the results, analysis and findings were drawn.

In Chapter VI, Conclusion was drawn from the data followed by a logical discussion. At the end of the chapter some suggestions and recommendations were tailored for the benefit of future researcher and students of the field.
In the reference section the researcher has listed works from various books, publication, research journal, the internet, article in press, magazine, newspapers, encyclopedia, thesis, videotape, electronic source, and web page as a ready reference.

In the Appendix a questionnaire and a map of NWFP attached.
Notes

1 As Roger's study proved by his famous model of Diffusion of Innovations, the two-step flow model has evolved gradually into a multi-step flow model that is often used in diffusion research, the study of social process of how innovation (new ideas, practices, objects, etc.) become known and are spread throughout a social system. The two-step flow model is mainly concerned with how an individual receives information and passes it along to others; the diffusion process concentrates on the final stage of the adoption or rejection of an innovation.

2 The situation in which a number of media are used in an organized way, to achieve a persuasive purpose with a chosen population. The most common examples are found in politics, advertising, fund raising, and public information for health and safety. Media campaigns tend to have the following additional characteristics: they have specific and overt aims and a limited time span and are thus open to assessment as to effectiveness; they have authoritative (legitimate) sponsorship, and their purposes tend to be in line with consensual values and with the aims of established institutions, and the population targeted for influence is usually large and dispersed (McQuail, Denis 1987).

3 As the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease. Similarly, Rogers (1976) points out that information results not only in increasing knowledge gaps, but also in gaps concerning behaviour and attitude. Accordingly, he changes the term to 'the communication effects gap'. He also remarks that mass communication is not the only cause of the gaps. Communication directly between individuals may also have similar effects. He finally underlines the fact that the gaps need not to be caused exclusively by different levels education - other factors may also contribute to the creation of such gaps.

4 According to Dr. Khalid Nawaz SSO WHO/PEI NWFP, since its inception in the year 1994 a total of 52 NID's were observed till December 2005.

5 A change agent is an individual who influences clients' innovation-decisions in a direction deemed desirable by a change agency. The change agent usually seeks to obtain the adoption of new ideas, but may also attempt to slow down diffusion and prevent the adoption of undesirable innovations. Change agents use opinion leaders in a social system as their lieutenants in diffusion campaigns.

6 WHO, Global Polio Eradication Initiative receive critical Gates Foundation grant to protect 34 million children, released on September 13, 2005.

7 Since 1994 when Pakistan formally launched NID's till 2005, 57 National Immunization Days were observed, Informed Dr. Abraham Mulugeta, Medical Officer WHO/PEI, NWFP.
8 Since its inception in 1988 the Global Polio Eradication Initiative has cut the transmission of polio by more than 99 percent. In 2004, the world confirmed fewer than 1300 cases of polio.

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9 Information is a resource. It has value, and it lets people do things that they couldn’t do otherwise. It is apparent, however that knowledge, like other kinds of wealth, is not distributed equally throughout our society. People who are struggling with financial poverty are also often information poor. There are haves and have-nots with regard to information just as there are haves and have-nots with regard to material wealth.

10 According to Dr. Jeffrey M. Bates, Project Officer (Polio Communication & Social Mobilization, Unicef, Pakistan Country Office, Islamabad.

11 According to Dr. Khalid Nawaz, SSO WHO/PEI NWFP.

12 The “bullet theory” is the name given by later researcher to one of the first conceptions of the effects of mass communication. Also referred to as the “hypodermic-needle theory” or the “transmission belt theory” (DeFleur & Ball-Roache, 1982), this essentially naïve and simplistic view predicts strong and more or less universal effects of mass communication messages on all audience who happen to be exposed to them.

13 and gratifications marked a realization that audiences were not empty vessels waiting to be filled with media messages. Instead, audiences selected what they wanted to see and hear because the media served a function for them and their selections gratified their needs for information.

14 Http://www.unicef.org/infobycountry/pakistan_15557.html
The conclusion of the M.Phil study "Impacts of PBC Peshawar Center Immunization Campaign on parents having high and low socioeconomic status in district Peshawar revealed that media’s impact in terms of immunization of children on parents sharing different socioeconomic status is not uniform. Immunization practice as per this study is 92 per cent in higher socioeconomic group and 70 per cent in lower socioeconomic group.

Daily Dawn (June 20, 2005). NWFP to be polio-free by December.


http://www.indiainfoline.com

Abdul Hakeem and Amanullah Bhatti in their study on “Evaluation of Interpersonal Communication at Family Welfare Centers of Population Welfare Programme” found that 66 per cent of currently married women in Pakistan watch television daily, 12 per cent women listening radio, and only 5 per cent read newspapers while magazine readers are only 2.8 per cent.

CHAPTER II

Literature Review

2.1 Background

Every week, a quarter of a million children die in the developing world. Million more live on with ill health and poor growth. A fundamental cause of this tragedy is poverty. Another fundamental cause is that today's knowledge about protecting the health and growth of children has not yet been put at the disposal of the majority (UNESCO, 1989 p.1).

Today, there is a world-wide scientific consensus on essential child health information and knowledge.

1 It is information which can help to save the lives of many millions of children in the developing world.

2 It is information which can drastically reduce malnutrition and help to protect the healthy growth of the next generation.

3 It is information which almost all parents can put into practice, in some degree, at very low cost.

It is therefore information and knowledge to which all families have a right.

The rapid expansion of the mass-media, and the remarkable coverage achieved, particularly by the electronic media, in both urban and rural areas have a great, and largely unrealized potential as agents of social change, accepted in the villages while capable of promoting new goals.

Experience in all countries has shown that only frequent, varied repetition of new information, from all sides and over many years, can truly succeed in putting new
health knowledge at the disposal of the majority (UNESCO, 1989 p.1).

It is therefore a communication challenge to all those who influence or control the principals channels of communication in all societies. These include;

1 Heads of state and political leader.
2 All branches of national and local government.
3 Religious and spiritual leaders.
4 Educational systems and the teaching profession.
5 Newspapers and magazines, television and radio.
6 Employers and the business community.
7 Trade union and cooperative leaders.
8 The medical profession and the health services.
9 Community health workers, nurses, and midwives.
10 Development workers and voluntary agencies.
11 Women's organizations and traditional leaders.
12 Artists, writers and entertainers.

So it is for all those who can help to undertake the greatest communication challenge of all-the challenge of empowering families to use today's knowledge to protect today's children-- and tomorrow's world.

Two decades ago, just 5 per cent of infants in developing countries were being vaccinated against the six major child killing disease. Today, about 80 per cent are being reached-a towering achievement. Deaths from those six diseases (measles, tetanus, whooping cough, tuberculosis, polio and diphtheria) have slashed by 3 million a year and at least 750,000 fewer children are left behind, paralyzed or mentally
disabled. Thanks to a triumphant global eradication campaign, polio is expected to follow smallpox into extinction by the end of this decade, eliminating the need for vaccination-and saving the governments of the world $1.5 billion in vaccine, treatment and rehabilitation costs every year. By any standard, the international immunization effort is the greatest public health story in history (Henderson, 1998 p.13).

The development of immunization has been one of the most striking features in the control of infectious diseases in the twentieth century. The prevention of infectious disease depends on controlling or eliminating the source of infection, breaking the chain of transmission or increasing the resistance of the individual to infection by general means or by immunization. The great reduction and in some cases the virtual disappearance of many diseases in some countries has been partly due to improved social conditions resulting in increased resistance to infection and reduction in transmission. There is no doubt that the development of immunization has been one of the most striking features in control of infectious disease in recent years, but immunization is indicated only when the classic methods of control are impracticable or unsuccessful. For example, if cholera is introduced into the UK or USA, there is no question of embarking on immunization, even if there were highly effective vaccine, for cholera is unlikely to spread in these and other industrialized countries because of high standard of public health practices (Dick, 1978 pp.1-2).

The world health assembly initiated in 1974 the expanded program of immunization (Henderson 1988 p.535-43). In Pakistan it was started as a pilot project in 1976. The countrywide immunization started in 1978 (Rafi, 1995 pp.34-37). The immunization against six target diseases as mentioned earlier, was started with a goal
that these will be completely eliminated by the year 1990. However by late 1980's it was realized that the date had to be extended to the year 2000, the year targeted for "Health for All" (WHO, 1981 pp.11-17) with some more emphasis on the eradication of three diseases, neonatal tetanus, polio, and measles. In September 1990 a world summit for children was convened at United Nations which was attended by a majority of world leaders and representatives of almost every nation including 71 Presidents and Prime Ministers (Grant, 1994 pp.10-11). It resulted in fixing new targets and goals including the eradication of polio, elimination of neonatal tetanus by (1995) 90 per cent and reduction in measles death by year 2000.

In 1996 the world moved a giant step closer to eradicating polio-giving hope that future generations of children ill learn o the disease from history books, never again at first hand. During that year, 400 million children-almost two thirds of the world's children under five-were immunized during mass campaign against polio. In addition, over 80 per cent of babies received at least three doses of oral polio vaccine during their first year of life, through routine immunization programs. Never before have so many children been immunized in so short a time against a single disease. This was not the end but the beginning of the end of polio. Throughout history, polio has lamed millions of people-most of them young children who had barely learned to walk. Others have died from suffocation after contracting the severest form of polio paralysis, which impedes normal breathing.

In December 1996, and again in January 1997, over 250 million children were immunized against polio during coordinated national immunizations days in nine countries in Asia-Bangladesh, Bhutan, China, India, Myanmar, Nepal, Pakistan,
Thailand, and Viet Nam. India succeeded in immunizing 127 million children on a single day in January 1997—the largest health event ever organized by an individual country (UNICEF, 1997).

Several countries have also carried out "missed opportunities" studies and follow-up investigations to determine the cause of program drop-outs. Studies in Nicaragua and Peru revealed that a common cause of missed opportunities to immunize is the failure of the health staff to ask about the immunization status of children when they visit to health facility for reason other than immunization. This point to a need to upgrade health workers' communication skills and to continue to educate the community about the benefits of immunization (WHO, 1987 pp.11-17). Monitoring systems put in place during 1986 have been maintained and refined, and these systems have provided better information for program management. In addition, activities have been increased in both advocacy and in the development of contacts with new donor partners. As a result, the program's income has continued to grow—particularly in the Regional and country offices. Until 1997, the program had not been especially active in promoting the value of immunization as a health intervention that can have a huge impact on death and disability. In the popular perception, the most important public health problems are often cited as the AIDS pandemic, the resurgence of tuberculosis, the emergence of Ebola fever and other devastating diseases, and the impact of heart diseases and cancer. Few people seem to be aware, for example, that more children die of measles than AIDS, that a new tuberculosis vaccine is being developed, and that immunization is the most cost effective of all the health intervention so far developed.

After an international investment of US $ three billion over 15 years, and the
successful engagement of over 200 countries and 20 million volunteers, polio could be the first disease of the 21st century to be eradicated. Health ministries in Geneva noted that the success or failure of the world’s largest public health initiative, spearheaded by national governments, the World health Organization (WHO), Rotary international, the US Centers for Disease Control and Prevention (CDC) and UNICEF, now rests with the governments of the six endemic countries. Polio transmission levels are now at their lowest ever in the key countries of India, Pakistan and Egypt, providing these governments with a rare opportunity to halting spread of the virus. The first milestone in 2004 toward global polio eradication may well come from Egypt, according to epidemiologists, followed closely by India.

Nigeria is currently the greatest risk to global eradication. In late 2003, immunization activities against polio were brought to halt in the state of Kano, the last major polio reservoir in Africa, because of unfounded rumors which suggested that the polio vaccine was not safe. With immunization activities stalled in Kano and polio campaigns of a sub-optimal quality in other northern states, polio was able to creep back across Nigeria and spread into the previously polio free countries Cameroon Chad, and through Niger, into Benin, Burkina Faso, Ghana and Togo, putting 15 million children at risk and necessitating a massive immunization campaign across west and central Africa (UNICEF, 2005).

The year 2003 also demonstrated the serious risks at play in the world’s final push to eradicate polio. In 2003, funding shortfalls required most polio-free countries to stop their polio immunization campaigns, thereby leaving millions of children more vulnerable to poliovirus infections from endemic countries, underscoring the urgency of
interrupting poliovirus transmission in the six remaining endemic countries.

The Ministers concurred on an all-out effort to reach every child with the polio vaccine from early in 2004, particularly in Nigeria, India and Pakistan, which together account for more than 95 per cent of all polio cases worldwide. Within these three countries, transmission of poliovirus is further confined to “polio hotspots,” especially in five states and provinces (Kano in Nigeria, Uttar Pradesh and Bihar in India and North West Frontier Province and Sindh in Pakistan) that together are linked to more than 75 per cent of all new cases worldwide in 2003.

To fully implement the bold eradication plans outlined by the Ministers of Health requires the continued generous support of public and private donors. An additional $150 million is urgently needed to fill the remaining funding gap for activities during 2004-2005.

2.2 History of Effects Studies

A heavily loaded term, traditionally and still commonly used to refer to the supposed direct consequences and impact of media messages on individuals. The term now also serves to describe a particular tradition of media study. Historically the media have been accused of encouraging people into a broad succession of activities and behaviors that they would otherwise not consider, and into accepting beliefs, values and ideas that they would otherwise not entertain. Notably the dominant preoccupations informing such claims, and the vast amount of research that they have generated, have been with negative effects, the media causing those social and psychological activities defined and classified as ‘problems’ or threats of an ‘anti-social’, ‘harmful’ or ‘dangerous’ nature. Thus a succession of moral panics, often orchestrated by the media
themselves, have amplified public concern about the effects of the media, in terms of their causing violence, juvenile delinquency, permissiveness and other social problems. Certain groups and section of the population have been consistently identified as especially vulnerable to such direct effects; for example, children, young people and the ‘uneducated’ (Sullivan, 1994 p.100).

As McQuail (1977) and others have suggested, this ‘effects’ focus and tradition moved from the unquestioned assumption of media power and direct influence, crystallized in the hypodermic needle model of media effects, to a preoccupation with the empirical measurement and demonstration of the processes involved in the communication of effects.

Mass media effects have been a hot issue of concern amongst social scientists since the birth of the movie in 1920s. The Magic Bullet Theory and the concept of mass society were enough to stir up intelligentsia relating to various social sciences disciplines, regarding effects of this new medium on children, adolescents, youth and other in society. The Payne Fund Studies: The Effects of Movies on Children (Lowery, 1995 p.31) challenged the old all powerful theory and the concept of mass society. They proved that media content does not elicit direct, immediate and uniform responses from their consumers. These studies pointed out certain social and psychological factors, which matter a lot in individual’s response to the media content. As a result, the theory of individual differences came into being. Although these studies proved that the media effects are not equal but they confirmed that media do affect their consumers.

The issue of degree and nature of media effects is still undecided amongst the social scientists. Some are of the view that media are good in functions like activating
latent predisposition and reinforcement but they have a very insignificant role in conversion i.e. to persuade people to change their preexisting attitude. Some communication researchers have claimed that the media can only reinforce change but cannot initiate it (Klapper, 1960). Other claims that media influences create personal attitudes as well as alter preexisting ones (Bandura, 1986, Liebert Sparlkin and Davidson, 1982, Jennings and Zillmann 1993).

Mass media have largely been taken as an important source, for bringing changes in knowledge, attitudes, and behaviors. A huge number of research studies have been conducted on media effects. Some consider them as a tool of agenda setting for the public. Other thinks that mass media are a social institution that helps in cultivation of desired norms and values. Others many assume the mass media as means of public opinion building, and effective devices for social change. Still there are others who believe that mass media are agents of the powerful-the dominant class of the society and are used for subordination of minorities, social, ethnic, political, religious control. However, irrespective of all these stand points, the scholars in the media studies agreed that “Yes” the contents of the media have “effects” though minimal, limited or powerful on the consumers. Mass media in all these roles are taken as an effective stimulus, which can easily get the desired effects from the target audience at cognitive, affective or conative levels.

Even before the beginning of scientific investigation into media effects, people shown greater concern over media influences. “A host of moralists and critics had posted warnings about the effects of the popular press throughout the nineteenth century as newspapers and magazines became more widely read”, (Lowery, 1995 p.31).
The role of mass media in bringing social change has also been an interesting area for researchers (diffusionists). Mass media are also being used in some cases to resist changes that tend to occur in the society. So it depends on the nature of change or innovation that whether it be resisted or encouraged and for this purpose what kind of communication channels is used which may prove to be effective in getting the desired results.

Similarly, the path of media influences is also an issue. Some researchers consider it as a filter down process. There are supporter of Two-step Flow Model of mass communication, introduced by Lowery and De Fleur as a result of their study “the People’s Choice”.²

There is a prevailing view that in diffusion of innovations mass media can play a vital role at the awareness. The mass media can reach large and scattered masses but are of little significance as compared to interpersonal channels in persuading them. Rogers made a generalization in his book Communication of Innovations (1971) that “Mass media are relatively more important at the knowledge function, and interpersonal channels are relatively more important at the persuasion function in the innovation-decision process.

The findings of Ryan and Gross study on ‘diffusion of hybrid seed corn in two Iowa communities’, published in 1943 which is regarded as a classic study on adoption of innovations, suggest that the interpersonal communication channels proved to be more effective than the mass media both in awareness and the ultimate decision of the respondents in adoption of the innovations.

According to Lowry and De Fleur (1995), the Ryan and Gross study became a
milestone because it focused attention on the major factors involved in the adoption of innovation: (1) a specific innovation, (2) processes of interpersonal and mass communication that created awareness of the item, (3) a specific kind of social system, and (4) different types of individuals who made decisions at various stages as use of the item discussed. Furthermore, it provided a pivotal point at which scholarly interest begun to shift from almost exclusive concern with the pattern formed by adoption in a population over time to the behavior involved in the process of adoption.

However, the researcher considers that as the study could not analyzed the role of television, which is more important amongst the mass media because of its audio-visual nature, therefore in the present age we cannot consider these results very convincing. Furthermore, that study was conducted in a very different culture as compared to that of Pakistan.

Longo (1990) suggests that in Brazil interpersonal networks are more important than the mass media in creating awareness of innovations for crop farmers and animal breeders while mass media are more important in explaining the adoption of innovations (Rawan, 2004 p.62).

The National Institute of Population Studies (NIPS) conducted a research study on Pakistan Demographic and Health Survey 1990-91 with objectives to determine the fertility, family size preferences, knowledge and use of family planning, the potential demand for contraception, the level of unwanted fertility, infant and child morality and health, immunizations, and child morbidity. The universe of the study was all urban and rural areas of the four provinces, excluding the Federally Administered Tribal Areas (FATA). The sample design adopted for this study was stratified, clustered, and
systematic sample of households. The study found that one in 21 women (5 per cent) had heard of a family planning messages only on radio and television. About one in nine women (11 per cent) had heard the messages on both radio and television. The role of radio and television was satisfactory in urban areas. In major cities 46 per cent had heard a family planning messages on radio or television.

Among the provinces, a large proportion of women of women (32 per cent) in the comparatively more urbanized provinces of Sindh had heard a family planning messages, followed by NWFP (19 per cent) and Punjab (18 per cent).

Exposure to family planning messages through the electronic media was positively correlated with education attainment. Sixteen per cent of the uneducated respondents reported that they heard a family planning message on radio or television. Whereas 52 per cent of the women with secondary education had heard the messages. The proportion of hearing family planning messages increased for television with increase in education.

A study on impacts and effects of communication strategy of Population Welfare Program of Pakistan in 1997 on seven districts of the country; three in Punjab viz. Lahore, Chakwal, and Musaffar Garh; two in Sindh viz. Khanpur and Karachi, one each in NWFP and Balouchistan viz. Peshawar and Quetta respectively. The study found that in urban areas 53 per cent respondents have radio sets, 61 per cent cassette recorders, 84 per cent television, 25 per cent video cassette recorders (VCR), 14 per cent dish antennae, whereas in rural areas radio was available with 39 per cent or respondent, cassette recorder 34 per cent, television 62 per cent, VCR 6 per cent and dish antennae 5 per cent (Rawan, 2004 p.73).
The data show that the availability of television was the highest in both rural and urban areas of Pakistan. Eighty-five per cent viewers of urban and 60 per cent of rural areas were exposed to any family planning program through television. The lowest percentage 52 per cent and 49 per cent in Peshawar and Khanpur rural areas respectively.

Iqbal and Zaidi (1997) in their study asked two questions regarding the importance of media. They asked; “which medium of communication has been able to achieve the intended results about the use of family planning methods?” and another was “in your opinion which particular medium of communication can prove effective in bridging the gap between knowledge and practice of family planning methods?” Eighty-two per cent (urban) and 72 per cent (rural) rated television as number one (Rawan, 2004 p.73).

The National Institute of Policy Studies (NIPS) conducted a research on ‘strengthening performance monitoring and evaluation of reproductive health and family planning program in Pakistan in 1999. The study found that knowledge of any family planning method among married women age 15-49 years in 94 per cent with almost similar distribution in urban and rural areas. The ever use of any family planning method is 42 per cent with 55 per cent in urban and 35 per cent in rural areas. The current use of any family planning is 25 per cent with 35 per cent in urban and 20 per cent in rural areas. Around 40 per cent women reported visit at home by workers of population welfare and health departments. Those who visited homes, 60 per cent of them discussed about family planning (NIPS, 2002, p.58).

In this study the respondents were only women. It did not explore the role of mass media in awareness, attitude change, or adoption/rejection of family planning methods. It
has also not compared the impact of mass media in general and television in particular versus interpersonal communication channels. Furthermore, among interpersonal communication channels the sole stress of the study remained on health and family planning departments’ workers. It did not study the role of friends, neighbors, relatives, spouse, and co-workers.

Similarly, the national Institute of Population Studies conducted a study on “Evaluation of Male Village-Based Family Planning Workers (MVBFPWs)” in 2002. The basic objectives of the study were to (1) conduct situation analysis of the project, (2) to know how male village-based family planning workers (MVBFPWs) deliver the family planning services and to what extent they are helpful in covering and bridging men towards the adoption of family planning methods, (3) to identify how the new shift of policy involving men in family planning programs is effective in achieving the goal of raising contraceptive use for family planning purpose, (4) to ascertain the overall impact of the introduction of male cadre of male village-based family planning workers (NIPS, 2002).

The study was carried out in the Punjab, Sindh and NWFP. Baluchistan was excluded due to non-existence of the activities of the project. Multi-stage sampling technique was applied to select the respondents. The study find out that 100 per cent persons (contact persons) have the knowledge of contraceptive methods. Most of contact persons reported television as a source of knowledge about family planning, (31 per cent) followed by male workers (25 per cent), and radio (17 per cent). This shows that male workers are second main source of knowledge of family planning. Television has proved the most important medium for disseminating information about family planning but the
importance of male workers can not be denied as they can deliver more than just
knowledge of family planning. Sixty three per cent contact persons are ever users of
contraception. As regards to provinces, ever users are 69% in Punjab, 60% in Sindh, and

Seventy two per cent respondents told that male workers have been a source of
knowledge for contraception, which is a point of satisfaction. Nine per cent males told
that friends/neighbors have been the source of knowledge (NIPS, 2002, p.103).

The study did not assess the role of media especially television and interpersonal
communication channels in the various stages of the innovation-decision process
regarding family planning. If focused only on men and did not include women.

The NIPS in collaboration with the London School of Hygiene and Tropical
Medicine (LSHTM) conducted the Pakistan Fertility and Family planning Survey
(PFFPS) 1996-97. The survey interviewed 7325 households in a representative sample of
the four provinces of Pakistan. In these households 7848 ever-married women aged
between 15 and 49 years were interviewed. Objectives of the survey were (1) to assess
the levels of contraceptive knowledge and practice by method and source f supply, (2) to
estimate levels, patterns and trends of fertility and childhood mortality, including birth
spacing and its links with child survival, (3) to identify differences across the country in
fertility and family planning use, (4) to measure the degree of contact between potential
clients and various components of the program and (5) to find out attitudes towards
family planning and family size, including unmet need for fertility regulation.

Regarding exposure to mass media, the study found that television and radio are
the most effective media, regularly reaching at least 30 percent and 23 per cent
respectively of the rural respondents. Among the urban women, 23 per cent listen to the radio and 67 per cent watch television regularly. This study also finds out awareness regarding different methods of family planning. Awareness regarding any method of contraception was 94.3 per cent. The knowledge about ‘female methods’ such as female sterilization, IUD, pills, and injectables was in general higher than that of ‘male methods’ such as condom, male sterilization, and withdrawal. Regarding the source of information about family planning the study found that television was a leading source of information on family planning for the respondents. It served a total of 45.9 per cent of the respondents. Out of this total 72.9 per cent were urban areas people and 34.6 per cent were responses from rural background. The province-wise awareness through radio was 46%, in the Punjab, 57.4% in Sindh, 37.4% in the NWFP and 19.0% in Baluchistan respectively. According to the study the ever use of contraception by the respondents was 36.4 per cent. The ever use was higher in urban areas than in the rural areas. Across provinces, ever use of any method was highest in the Punjab (39%) followed by Sindh, NWFP and Baluchistan. The study found that nationally, 23.9 per cent women reported that they currently use some method of contraception. Urban areas respondents were currently using contraception more than the rural areas (NIPS, LSHTM, 1998).

The National Institute of Population Studies undertook a study on 'Effectiveness of Media Messages in Promoting Family Planning Program in Pakistan in 2000. Objectives of the study were (1) to examine people's access to electronic (radio, television) and print media, (2) to determine exposure to family planning messages, (3) to determine the impact of Information, Education and Communication (IEC) component on knowledge, attitude, and practices of family planning, and (4) to determine the specific
reasons for non-use contraceptives.

The sample was selected through two-stage stratified cluster sampling procedure throughout the country. The Federally Administered Tribal Areas (FATA) was excluded from the sample.

The study finds that 44.3 per cent currently married women aged 15-49 have ever been exposed to radio. This exposure was 42.5 per cent in urban and 45.1 per cent in rural areas. Exposure to television was higher among the respondents as compared to radio. There were 62.8 per cent women who have ever watched television with 78.4 per cent in urban and 56.3 per cent in the rural areas. The daily viewers were high in urban areas as compared to rural areas. Exposure to newspapers was lower as compared to radio and television. Only 27.2 per cent of the respondents had ever read any newspaper. There were 69.3 per cent currently married women who ever heard/watched/read about family planning programs in Pakistan with 82.7 per cent in urban and 63.7 per cent in rural areas. Among the three main mass media i.e., radio, television and newspapers, television was the leading mass medium in awareness about family planning. There were 62.4 per cent currently women who have ever watched something about family planning on television in Pakistan with 79.1 per cent in urban and 41.0 per cent in rural areas. There were 16.1 per cent women who have ever read about family planning in newspapers/magazines with 31.4 per cent in urban and 9.7 per cent in rural areas. There were 92.8 per cent women who thought that family planning messages were effective in conveying the real objectives with 94.2 per cent in urban and 92.1 per cent in rural areas. The specific knowledge of any family planning method was 83.0 per cent with 86.1 per cent in urban and 81.8 per cent in rural areas. Among methods, knowledge was highest
about pills (79.9%), IUD (74.5%) and condom 66.3%. When it comes to sources of becoming aware about family planning, the percentage was the highest for television (36.4%) followed by relatives (15.5% spouse (10.6), neighbors (8.1%), LHV, Dai, Hakeem (6.9%), family planning workers (5.4%) and radio (4.5%), printed materials accounted for only 0.5 per cent (Rawan, 2004 pp.79-80).

The ever use of contraception was found to be 32.2 per cent with 49.8 per cent in urban and 23.5 per cent in rural areas. Motivation source for the ever use of family planning methods was television in 37.3 per cent cases, followed by spouse in 23.3 per cent, relatives in 11.9 per cent and family planning workers in 7.5 per cent cases. Here too radio printed materials share was not encouraging. The current use of contraception was 23.6 per cent with 39.3 per cent in urban and 17.1 per cent in rural areas.

The study also finds a relationship between exposure to television and the use of contraception, 32.6 per cent are current users compared to 8.4 per cent among those who never watched television similar differentials were noticed in both urban and rural areas. The study also found a relationship between level of education and exposure to television practicing family planning. The tables given below show this relationship:

Table 2.1: Television exposure amongst married women aged 15.49 years.

<table>
<thead>
<tr>
<th>Exposure to television</th>
<th>Pakistan</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Ever Watched</td>
<td>32.6</td>
<td>1684</td>
<td>45.2</td>
</tr>
<tr>
<td>Never Watched</td>
<td>8.4</td>
<td>997</td>
<td>17.8</td>
</tr>
</tbody>
</table>

Table 2.2: Television exposure and education level amongst married women.

<table>
<thead>
<tr>
<th>Exposure to television</th>
<th>Educational level</th>
<th>No schooling</th>
<th>Primary or less</th>
<th>Higher</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>26.1 (1023)</td>
<td>33.3 (335)</td>
<td>52.4</td>
<td>32.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>6.6 (905)</td>
<td>28.4 (68)</td>
<td>18.5</td>
<td>8.4</td>
</tr>
</tbody>
</table>

Source for both tables: 1) Hakeem and Tanweer, 2000.
Exposure to television was found to have independent effect on the use of contraceptives. Those who had watched television had more use of contraceptives compared to those who did not watch in all educational categories (NIPS, 2000).

The above-mentioned study (NIPS, 2000) independently evaluated the role of various interpersonal communication channels. Although it says that television proved to be more effective in awareness of the respondents (36.4%) regarding family planning followed by relatives (15.5%) spouse (10.6%), neighbours (8.1%), LHV, Dai, Hakeem (6.9%), and family planning workers (5.4%).

The National Institute of Population Studies conducted studies to know the effectiveness/usefulness of Information, Education, and Communication component of the Population Welfare Program but no separate evaluation of Interpersonal Communication (IPC) was undertaken until 1996. In March 1996 the NIPS undertook a study on ‘Evaluation of Interpersonal Communication at family Welfare Centers of Population Welfare Program’ to determine the role of interpersonal communication. Objectives of the study were (1) to find out the exposure of women to mass media regarding family planning, (2) to find out the awareness of women regarding Family Welfare Centers (FWCs) in catchments areas of FWCs, (3) to find out the role of interpersonal communication at FWCs, (4) to find out the status and extent of interpersonal communication at FWCs for motivating women in catchments areas, (5) to find out the knowledge of women in catchments areas regarding contraception, (6) to determine the use of contraception by them, (7) to assess the status and extent of follow up visits by family welfare workers to keep current users intact and reduce drop outs.

The sample for the survey was two stages. At first stage a stratified systematic
random sample of 65 Family Welfare Centers was drawn out of the existing Family Welfare Centres in Pakistan. At second stage a systematic random sample of 30 households was drawn from the vicinity of each Family Welfare Centre. Thus there were 1950 households in the sample. The study found that mean age at marriage for wives at national level was 18.3 years. There was little variation by urban and rural areas with slightly higher age at marriage in urban areas. It was observed that majority of the husbands (39 per cent) got married at the age group 20-24 years. Thirty one per cent got married at the ages 25-29 years. The mean age at marriage of husbands is found at around 24 years. There was little differential by urban and rural residence.

As far as exposure to mass media of the respondents is concerned the study finds that 66 per cent of currently married women watch television daily, 12 per cent women listen to radio daily, and only 5 per cent women read newspapers daily while magazines readers were only 2.8 per cent. A high proportion of urban women watch television daily (80%), compared to rural women (55%).

Higher percentage of women attended family welfare centre first time on the advice of friends/relatives (36%), followed by family welfare workers (31%), husband (8%), and paramedics 7 per cent (Hakim & Bhatti, 2000, p.23). Television programs about family planning impressed only 2.5 per cent respondents with 2.3 per cent in urban and 2.6 per cent in rural areas. The study also finds that 47 per cent of currently married women ever used any method of family planning, with 40 per cent ever using any modern method and 17 per cent using any traditional methods. The ever use was higher among urban women (57%), compared to rural women (38%). It was observed that 33 per cent women are currently using any method. Current use in this specific sample was higher
than the national figure of 24 per cent because the sampled women lived around the vicinity of family welfare centers. The study finds a direct relationship between education and the use of contraception among the respondents. Thirty-six per cent respondents reported that they accepted a contraception method on the advice of husband, 20 per cent reported that they used contraceptives on her own choice, 17 per cent used family planning method on advice of someone else, 11 per cent accepted the advice of family welfare workers, and 8 per cent accepted the advice of other relatives and friends (Hakim & Bhatti, 2000). The study revealed that 66 percent currently married women received the message from family welfare workers or family welfare assistant for contraception while discussing family planning with them. Talk on media like television and radio is not possible regarding family planning methods keeping in view socio-cultural norms of the society (Hakim & Bhatti, 2000, p.40).

The National Institute of Population Studies conducted a research study on ‘Perception of Religious Leaders about Population Welfare’ in 1999-2000 to solicit opinions, views and attitude of representative sample of formal and informal religious leaders towards family planning (Hakim, Hussain, Baqai and Tanweer, 2000). Sample for the study was drawn from two broad categories of religious leaders that are (1) Imam mosques and (2) religious scholars. This was a countrywide study covering all the four provinces, Azad Jammu Kashmir (AJK) and Federal Administrative Tribal Areas (FATA). Random and convenience sampling techniques were used for selection of Imam Mosques and religious scholars respectively.

As far as knowledge about family planning is concerned almost 68 per cent religious leaders have exposure to mass media regarding family planning, 77 per cent in
urban and 63 per cent in rural areas. Education level is positively associated with the exposure to mass media regarding family planning as those having secondary and above education have had 90 per cent exposure, compared to 37 per cent of those having informal education (Hakim, Hussain, Baqai and Tanweer, 2000, p24). The data showed that almost all religious leaders were aware of the implications of rapid population growth rate. Forty four per cent religious leaders perceive that large family size creates psychological and economic problems. There was no much difference in the perception of Imam Mosque and religious scholars (Hakim, Hussain, Baqai and Tanweer, 2000, p.926-27). According to the data 43 per cent religious leaders that Islam disapproves family planning, 40 per cent religious leaders perceive that Islam approves that Islam approves family planning. A wide urban-rural differential was also identified in approving family planning in Islam with 15 per cent urban and only 6 per cent in rural areas. The ever use of contraceptive methods among religious leaders is low (15.5%) with 20 per cent in urban and 13 percent in rural areas.

The above study explored religious leaders. In fact majority of these people are opposed to the family planning on religious, social and political grounds. They are already carrying a negative attitude towards this phenomenon. The study gave great importance to the views and advice of religious leaders on the issue of family planning. But in fact in society their views and advises don’t carry that much weight. Secondly, family planning is a very private issue. Thirdly, religious leaders’ but the potential adopters and users of family planning are women too. The role of interpersonal channels has not been evaluated in this study. And even the role of mass media has not been studied at all stages of the innovation-decision process.
The National Institute of Population Studies carried out a study on ‘Evaluation of Village-based Family Planning Workers (VBFPW) Scheme in Pakistan in 1999 to assess the impact of the scheme for the success of family planning in the country. The sample for the study was drawn in two stages. In the first stage 373 VBFPWs were selected from Punjab, Sindh, NWFP and Baluchistan by using random systematic sampling technique out of the total of 7446. In the second stage, 15 eligible women were selected from each area of the VBFPW by systematic random sampling technique. The eligible women were selected out of the record maintained by the sampled VBFPWs. The study found that almost all the clients had knowledge of some method of family planning. The ever use of any method was found at 61.3 per cent. In Punjab the ever use was 63.5 per cent, in NWFP it was 68.7 per cent, and in Sindh and Baluchistan it was 49 and 54.3 per cent respectively. Among the ever use 54.7 per cent cases were recommended by VBFPWs. Husbands have recommended 21.8 per cent followed by friends/relatives (9.0%) television (1.2%) doctor and paramedics (3.4%). The role of VBFPWs was as low as 38.9 per cent in NWFP and as high as 77.1 per cent in Baluchistan. The role of husband was high (35.4%) in NWFP and low (7.6%) in Baluchistan. The study found a positive relationship between age and education, and the use of contraception (Popalzai, 2000 pp. 620-69).

The above study confined only to women. It did not study men. The study does not tell about the source of knowledge of family planning methods of the clients. It claims that the VBFPWs mainly convinced the users but it shows a bias because all the respondents were clients of the VBFPWs.

The National Institute of Population Studies conducted a survey on “Quality of
Care by Family Welfare Centres” during 1998-99. The objective of study was to undertake situation analysis of the family welfare canters of the population welfare program, assess the quality of services available at the centers, and choice and preferences of clients for contraceptive method, and change in choices and reasons for dropouts (Ayazuddin & Hakim, 2000). The sample design for the survey was two staged. In the first stage, a systematic random sample of 73 Family Welfare Centres (FWCs) was selected from Punjab, Sindh, NWFP, and Baluchistan. In the second stage, 80 clients per FWC were selected by systematic random sample. They were selected on the basis of records in FWC.

The study revealed that knowledge of any method was 100 per cent among the respondents. Most of the clients received knowledge from Family Welfare Workers (55.4%), followed by Family Welfare Assistants of FWC (11%), friends/relatives (9.3%) and village Based Family Planning Worker (6.9%), Doctor (1.1%), television (2.7%), radio (0.1%), newspaper advertisements (0.2%), husband (1.2%), and paramedics (1.1%). The ever use of contraception was 100%. Eighty three per cent of the respondents were currently using contraception. Current use was higher in rural areas as compared to urban areas. Major source of advice for the use of family planning was staff of FWC (23.8%), followed by friends/relatives (19.8%), another acceptor (19.6%). Friends/relatives were more significant in urban areas (23.3%) than in rural areas (1.7%).

The above-mentioned study focused only on female population. The respondents of the study were the clients of the Family Welfare Centers therefore; its findings regarding knowledge and use of contraception seemed to be doubtful. The study did not focus on the social, economic and educational backgrounds of the respondents.
The National Institute of Population Studies evaluated the Reproductive Health Services-A (RHS-A) centres in 2000. The major objectives of the study were to assess the performance of these hospital based units in terms of usefulness, appraise the utilization of services received by the clients, assess its weaknesses, and identify major problems faced by the RHS-A centres in service delivery and administration. A national sample was drawn covering all the four provinces, AJK, Northern Areas and the Federal Capital city, Islamabad. A sample of forty-two per cent of the total RHS-A centres (44 centres) was selected by stratified random sampling. A total of 2200 respondents (50 clients per sampled centre) were selected for interview. Among the selected clients 37.4 per cent were successfully interviewed. The study found that mean age at marriage of the women was 18.11 years at the national level, 18.22 years for urban and 17.95 years for rural areas. The average live birth rate was 4.8 live births and mean number of living children was 4.6. About 30 per cent women reported that the source of knowledge of contraception was RHS-A centres. Nearly one tenth of the women indicated that their source of awareness was private doctors. The percentage of family welfare workers and family welfare assistant as a source of awareness was 15.7 per cent and 9.5 per cent respectively. About 24 per cent women reported that Village based Family Planning Worker was their source. One tenth of the women reported that their source of knowledge was lady health visitors whereas 4.5 per cent of the women acquired knowledge from family welfare councilors. A large number of women reported that they had attained awareness of contraception from friends and relatives with 49.6 and 63.2 per cent respectively. About 26 per cent women reported that IEC material was effective of knowledge (Aziz, et al, 2001).
The sampled respondents were only women; they were all clients of the RHS-A centres. The survey did not ask the respondents about their initial knowledge of family planning. It also not discussed the role of mass media especially television in awareness, attitude formation, and decision regarding adopting family planning and at other stages of the innovation-decision process of the individuals regarding family planning. It did not explore the role of other important variables like cosmopolite ness, general attitude of the respondents towards change, economic, and educational levels.

The adoption and diffusion of innovations has an extensive literature history. Lindner (1987) classified the literature into studies principally concerned with adopter characteristics (adoption studies) and those concerned principally with innovation characteristics (diffusion studies), with each category having both cross-sectional and temporal studies. While the literature has expanded considerably in the intervening years, as reviewed by Feder and Umali (1993), the essential dichotomy described by Lindner (1987) still exists, albeit assisted by an increasingly sophisticated set of mathematical and econometric techniques.

**Diffusion of Hybrid Corn in Iowa**

The Ryan and Gross (1943) study of the diffusion of hybrid seed corn in Iowa is the most influential diffusion study. The hybrid corn investigation includes each of the four main elements of diffusion. The innovation of hybrid corn was one of the most important new agricultural technologies when it was released to Iowa farmers in 1928. The new seed ushered in a whole set of agricultural innovations in the 1930s through the 1950s that amounted to an agricultural revolution in farm productivity. Hybrid seed was developed by agricultural scientists at Iowa State University and at other state land-grant
universities. The diffusion of hybrid seed was heavily promoted by the Iowa Agricultural Extension Service and by salesmen from seed corn companies. Hybrid corn yielded about 20 percent more per acre than the open-pollinated varieties that it replaced. The adoption of hybrid corn meant that an Iowa farmer had to make important changes in his corn-growing behavior.

In 1941, Neal Gross, a new graduate student in rural sociology, was hired as a research assistant on the hybrid corn diffusion project. Ryan and Gross selected two small Iowa communities located west of Ames, and proceeded to interview personally all of the farmers living in these two systems. Using a structured questionnaire, Neal Gross, who did most of the data gathering, interviewed each respondent as to when he decided to adopt hybrid corn (the year of adoption was to become the main dependent variable in the data analysis), the communication channels used at each stage in the innovation-decision process, and how much of the farmer's corn acreage was planted in hybrid (rather than open-pollinated seed) each year. In addition to these recall data about the innovation, the two rural sociologists also asked each respondent about his formal education, age, farm size, income, travel to Des Moines and other cities, readership of farm magazines, and other variables that were later correlated with innovativeness (measured as the year in which each farmer decided to adopt hybrid corn).

During one personal interview, an Iowa farmer asked Gross for advice about controlling horse nettles. Gross had never heard of horse nettles. He told the farmer that he should call a veterinarian to look at his sick horse (horse nettles are a kind of noxious weed).

Neal Gross interviewed 345 farmers in the two Iowa communities, but twelve
farmers operating less than twenty acres were discarded from the data analysis, as were seventy-four respondents who started farming after hybrid corn began to diffuse. Thus, the data analysis was based on 259 respondents.

All but two of the 259 farmers had adopted hybrid corn between 1928 and 1941, a rather rapid rate of adoption. When plotted cumulatively on a year-by-year basis, the adoption rate formed an S-shaped curve over time. After the first five years, by 1933, only 10 percent of the Iowa farmers had adopted. Then, the adoption curve "took off," shooting up to 40 percent adoption in the next three years (by 1936). Then the rate of adoption leveled off as fewer and fewer farmers remained to adopt the new idea.

Farmers were assigned to adopter categories on the basis of when they adopted the new seed (Gross, 1942). Compared to later adopters, the innovators had larger-sized farms, higher incomes, and more years of formal education. The innovators were more cosmopolite, as measured by their number of trips to Des Moines (Iowa's largest city, located about seventy-five miles away).

Although hybrid corn was an innovation with a high degree of relative advantage over the open-pollinated seed that it replaced, the typical farmer moved slowly from awareness-knowledge of the innovation to adoption. The innovation-decision period from first knowledge to the adoption-decision averaged about nine years for all respondents, a finding that the innovation-decision process involved considerable deliberation, even in the case of an innovation with spectacular results. The average respondent took three or four years after planting his first hybrid seed, usually on a small trial plot, before deciding to plant 100 percent of his corn acreage in hybrid varieties.

Communication channels played different roles at various stages in the
innovation-decision process. The typical farmer first heard of hybrid seed from a
salesman, but neighbors were the most frequently cited channel leading to persuasion.
Salesmen were more important channels for earlier adopters, and neighbors were more
important for later adopters. The Ryan and Gross (1943) findings suggested the important
role of interpersonal networks in the diffusion process in a system. The farmer-to-farmer
exchange of their personal experiences with hybrid seed was at the heart of diffusion.
When enough such positive experiences were accumulated by the innovators and early
adopters, and exchanged with other farmers in the community, the rate of adoption took
off. This threshold for hybrid corn occurred in 1935. After that point, it would have been
impossible to halt the further diffusion of hybrid corn. The farm community as a social
system, including the networks linking the individual farmers within it, was a crucial
element in the diffusion process.

In order to understand the role of diffusion networks and opinion leadership, Ryan
and Gross (1943) should have asked sociometric questions of their respondents, such as,
"From which other farmers have you obtained information about hybrid corn?" The
sample design, which consisted of a complete enumeration in two communities, would
have made the use of sociometric questions appropriate. But information was simply
collected from all community members as if they were unrelated respondents in a random
sample" (Katz and others, 1963).

Even without sociometric data about diffusion networks, Ryan and Gross (1943)
sensed that hybrid corn spread in the two Iowa communities as a kind of social snowball:
"There is no doubt but that the behavior of one individual in an interacting population
affects the behavior of his fellows. Thus, the demonstrated success of hybrid seed on a
few farms offers new stimulus to the remaining ones.

Study of the invisible college of rural sociologists investigating diffusion as of the mid-1960s identified the researchers who first utilized a new concept and/or methodological tool in studying diffusion (Crane, 1972). Ryan and Gross launched fifteen of the eighteen most widely used intellectual innovations in the rural sociology diffusion research tradition. So Bryce Ryan and Neal Gross played key roles in forming the classical diffusion paradigm. The hybrid corn study has left an indelible stamp on the history of diffusion research. This case illustration is based on Ryan and Gross (1943), Gross (1942), Ryan and Gross (1950), and Valente and Rogers (1994).

Adoption of Agricultural Innovations

This study focuses on predictive and explanatory models of adoption of agricultural innovations in Sudan and their implications for agricultural development programs. The problem points to the emphasis placed by agricultural development planners in the Sudan on large-scale, capital-intensive, irrigated and rain fed agriculture, and the resulting neglect of farmers in the traditional sector and in small- and medium-sized farms in the slowly modernizing area. Factors related to adoption of agricultural innovations among these farmers need to be analyzed. The review of the literature covered models of man, modernization theory and related concepts, and theoretical perspectives on adoption and diffusion of innovations. Based on the review, a causal model was developed and variables were selected for empirical analysis. The sample included 216 farmers selected from 18 villages in the White Nile Province to represent 'traditional' and 'modernized' farming systems. Data collection involved use of structured interview schedules. The statistical scaling methods included Guttman scaling, factor
analysis, frequency distribution analysis, correlation and multiple regressions, and path analysis. The results revealed that adoption of agricultural innovations is more closely associated with individual- and farm-related factors than with community- and family-level variables. The revised path model quantified direct and indirect effects on adoption behavior from farm size, urban centers, institutional services, education, and incentives for innovation, attitudinal modernity, mass media, and organizational participation. Other significant predictors of adoption behavior identified by regression models included age (negatively associated) and locational centrality. The implications include the need for improvement of transport and communication between farming regions and urban centers, the creation of village service centers, and the improvement of intermediate market towns. The need for the amalgamation of small farms into larger units, such as cooperatives, is also implied. Such an amalgamation would improve service delivery and marketing opportunities. Increasing the local availability of extension services, technical inputs, credit, and marketing facilities is likely to increase the profitability of modern practices and create incentives for innovation. An effective strategy would be to improve education in rural areas, employment of the mass media, and involvement of rural youth, young farmers, and local organizations in agricultural development programs (Saeed, Awadalla Mohamed, 1989)

2.3 Effects of Media on Personal and Public Health

Health campaigns involve the purposive use of mass media for the health education and behavioral change. Such campaigns have been used throughout the world with varying levels of success (Brown, 1994).

For whatever reasons, some media health campaigns have not produced long-term
behavioral changes while others have; some have produced positive, intended effects whereas others have produced negative, unintended effects; and some have produced a variety of effects. For an example of the latter, a North Dakota media campaign to promote mammography screening found that although the campaign seemed to encourage women who had already been screened to have another screening, it seemed to adversely affect women who have never had a mammogram (McCaul, 1998).

The public health campaigns in the 1980s to raise AIDS awareness and change at-risk behaviors succeeded in raising the awareness of the general public, but they also increased anxieties about the disease. Moreover, these campaigns, both in Great Britain and the United States, failed to reach high-risk audiences such as drug users (Snyder, Anderson, & Young, 1989). Subsequent research revealed that sometimes media interventions are consumed by at-risk and do result in the desired effects-in this case more positive behavior change (Elwood & Ataabadi, 1996; Guenther-Grey, Schnell, & Fishbein, 1995).

The use of different communication channels has also produced inconsistent findings in different studies. Some studies have indicated that a campaign featuring a combination of mass media messages and interpersonal communication may be the most effective in producing desired attitudinal or behavioral changes (Flynn, 1994; Guenther Grey, Schnell, & Fishbein, 1995; Svenkerud, Rao, & Rogers, 1999). Others, however, have shown that exposure to mass media messages alone was responsible for the changes in behaviors or attitudes (McDivitt, Zimicki, & Hornick, 1997). The differences in results may be attributed to fundamental differences in the campaigns themselves or to their adherence to the key principles for campaigns success.
Some findings suggest that the use of fear appeals in health communication campaigns has been rather successful (Hale & Dillard, 1995). Quantitative reviews of fear-appeal research have shown that such appeals are persuasive (Boster & Mongeau, 1984; Mongeau, 1998; Sutton, 1982). According to Hale and Dillard (1995):

The most recent of the media-analyses of including several newer studies perhaps the best of the lot, concluded that perceived fear and the attitude of the target were positively correlated, as were perceived fear and behavior. It is clear from these findings that fear-arousing message content is persuasive and that abandoning the use of fear would be to abandon an effective persuasive strategy... [T]he quantitative review also demonstrates that the relationship between fear and persuasion is a complex one. (p. 70)

In the net shell we can say that both health professionals and communication researches are interested in the mass media’s potential to affect health. Nancy Milio (1986) pointed out; the mass media can influence health at both a personal and public level. At the personal level, the mass media may provide information and models that stimulate change—either positive or negative—in health related attitudes and behaviors. At the public level, the mass media also may raise awareness of health issues among policy makers and, thus, may contribute to changing the context in which people may choose about their health (Bryant, Jennings and Zillmann, Dolf 1994 p. 389).

These effects of the mass media may be intended by the message producer, as is the case when health educators develop public information campaigns. Mass media campaigns aimed at improving specific health conditions have been used around the
world and have targeted a wide variety of health problems.

Seen in this perspective, health educators are beginning to use two new strategies to affect changes in persona and public health. Both strategies challenge traditional notions about intentions of the message producers and begin to address some of the problems of traditional campaigns. The first strategy has been called “edutainment” and involves imbedding health related messages in entertainment content. The second strategy is called “media advocacy” and involves health professionals taking an active part in news coverage of health issues.  

2.4 Electronic Media and Polio Immunization

Electronic media, especially the Television is one of the key sources for the dissemination of information regarding polio innovation throughout the world. A research study in U.P. commissioned by UNICEF found that more than 94% of respondents reported that they came to a polio booth after seeing the spots on television (www.indiainfoline.com).

A UNICEF-supported Television and Radio campaign to fight polio has won a silver medal at this year’s Effie Awards given by the advertising industry. The media campaign, developed by Ogilvy & Mather and featuring Amitabh Bachchan, came first in the services category at the annual awards, held recently in Mumbai. "This award is a credit to the hard work of the Government of India and its polio immunization program, said Maria Calvis, UNICEF Representative in India. “The television and radio campaign has made an important contribution in raising awareness and motivating families to get their children protected from polio.”
2.5 The Global Program for Vaccination (GPV) Internet Pages

With approximately 50,000 visitors each month during 1997, the Internet has become an important communication channel for GPV. The news section is now updated weekly, and users have ready access to the newest data and information about all aspects of vaccine and immunization. In addition, an extensive selection of GPV documents can now easily be obtained electronically. The new GPV Web pages can be found at:
http://www.who.ch/gpv/.

Furthermore in association with the Children's Vaccine Initiative and with the help from the Government of Norway, the GPV is issuing a series of regular updated "position papers" on vaccines and vaccine combination which are used to fight disease which have an international public health impact. These papers outline the use of vaccines in large scale immunization programs and summarize background information on the disease and the vaccines that can prevent them, concluding with the current WHO position on their use globally. The position paper are reviewed by specialists both within and outside WHO, and are designed for use mainly by national public health officials and immunization program managers, but may also be of interest to funding agencies, vaccine manufactures, the medical community, and the scientific media.

Pakistan is predominantly a rural Third World country with a high under-5 morality rate of 137 per 1000 (Grant 1995) and a high maternal morality rate of 600 per 100,000 lives births (UNICEF 1992). Malnutrition in women and children is widespread, with 50 per cent of children under-5 stunted. Pakistan has a high population growth rate (31 per cent per year) and the poor health status of many of its people requires extensive health care services (Majumdar B, Amarsi (1997). Moreover, the people in the towns are
better off than those of rural areas, but unplanned urban growth has led to pockets of severe urban poverty (Northrop Clewes 1997). The expanded program of immunization (EPI) was launched in Pakistan with the main objective of reducing our high less than 5 years morality. In the year 1978 a study was conducted to assess the program of the EPI. It was found that only 2 per cent of children fewer than 5 years had been immunized. Such disappointing results prompted the Pakistan Government to launch a three year Accelerated Health Program (AHP) in 1983. This action increased the coverage greatly and by 1985, 23 per cent of children in the 0-11 month age group and 66 per cent of children in the 12-23 month age group were found to be fully immunized (UNICEF 1994). The results of 1991 coverage of NWFP showed coverage percentage according to immunization cards as 86.4 per cent (UNICEF 1996). Another coverage survey of NWFP in 1993 showed 69 per cent of children under one year age group were fully immunized. (Rahman, 1994). In short span of few years, the program achieved success in many spheres. One of the biggest achievements was the development and setting up of a countrywide infrastructure. The district health officer, were made responsible for immunization activities in their areas, which supervised the services and reported back to their provincial capital. At provincial level EPI managers were appointed who compiled reports on a monthly basis and ensured timely supply of vaccines, syringes, cold chain, equipment and training staff. At the Federal level the program was managed and supervised by the Federal EPI Cell headed by the National EPI Manager. This cell works under the guidance of the Executive Director, National Institute of Health. The monthly reports received from the provinces were compiled and analyzed at the Federal EPI Cell. The EPI program was supported by WHO, UNICEF, CIDA, USAID and other donor
agencies (Health Department NWFP 1993). Immunization services were provided to the urban areas, through fixed centers. The services to the rural areas were through mobile teams (UNICEF 1994 p.1).

To reduce the risk of major out breaks, combat the high incidence of polio during 1993 and to save the Pakistani children from this fatal and disabling disease, the government of Pakistan decided to launch National Immunization Days (NIDs) against polio, for the first time in 1994, in line with the recommendations of WHO (UNICEF 1994 p.2). Government of NWFP with close collaboration with the Federal government is organizing regular rounds of NIDs. Consequent upon the conduction of this campaign incidence of polio dropped sharply.\(^4\)

### 2.6 Plans for the 1\(^{st}\) National Immunization Day (NID)

The Federal EPI Cell felt that urgent action was required if an epidemic of polio was to be averted during 1994. The situation was so bad that despite the low coverage figures of routine polio immunization, a decision was made to go ahead with the 1st NID against polio. Discussion began between Ministry of Health, WHO, UNICEF, CIDA and ADB, as early as February 1994, however the dates were not finalized till the middle of March. Even then the program could not be finalized due to shortage of funds.\(^5\) The estimated target population of all children up to five years of age was 20 million; therefore 40 million doses were required to give two doses with a gap of one month. By the end of March, supply of polio vaccine were confirmed, when CIDA (Canadian) agreed to provide 27 million doses out of an estimated requirement of 40 million doses and the balance was to be procured with the help of Asian Development Bank and WHO. The dates for the 1st NID were fixed for April 27 and May 28, 1994. Although UNICEF
had been participating in the initial discussion, along with WHO and the other partners, however the final request for support came as late as the last week of March 1994. At this stage the availability of the vaccine had been confirmed and some funds had been earmarked by the government for logistic support, however there was no communication strategy nor were any funds available for advocacy, social mobilization, program communication or training (UNICEF 1994 pp.3-4).

2.7 The role of the Communication Strategy in the 1st NID

The situation was assessed and it was felt that although the time was too short for effective planning and implementation; however this unique opportunity or reviving interest in the routine immunization program and to interact with 10 million families throughout the country could not be missed. UNICEF offered to provide technical support in drawing up a Communication Strategy. The Strategy was jointly developed with support from the Federal EPI Cell and presented to the National Coordination Committee for NIDs. UNICEF had undertaken to develop pre-test, produce and disseminate: 20 million leaflets, 10 million handbills, 300,000 posters, 400,000 orientation guidelines, and 400 copies of training orientation videos. The dissemination plan envisaged that the material should be delivered to the District Health Officers directly so that it does not get held up at the provincial level.

With 109 districts spread over 307,374 square miles, some of which are so remote that it takes more than a week to reach, effective and timely dissemination became the biggest challenge. A special NID Coordination Unit was set up in UNICEF Islamabad, headed by the Senior Program Officer Health and Nutrition.

At the Provincial level, the Resident Program Officer supervised the special
assignment with the help of Program Officers Health and Nutrition. A close liaison was maintained with the provincial offices on a minute to minute basis so that problems could be tackled as soon as they arose. While UNICEF Islamabad was focusing on the production and dissemination of the material, the provincial offices were focusing on the social mobilization of different social groups to take active part in the program.

As part of the district level plans, 200,000 special polio centers were to be established throughout the country. It was estimated that each center would cater to 100 children. Each center was to be manned by 2 volunteers for registration and giving polio drops. The provincial offices also followed up with the District health Officers to ensure that training/orientation of the 400,000 volunteers was completed in time.

2.8 Social Mobilization and Program Support Communication Activities for the 1st NID

A nation-wide social mobilization campaign was launched. In each province special seminars and meetings were held to bring together NGO’s, private sector and government officials. Hundreds of social groups including students, scouts and girl guides, volunteered support in the form of material, space for staff. Several NGO’s with hundreds of outlets throughout the country offered their offices for setting up of Polio centers. They also provided transport facilities in many part of the country. Thousands of banners were produced with the help of NGO’s and private sector. They were displayed at special Polio centers to help people identify the centers. Posters were put up at all public places and health facilities to remind the people about the program. A special orientation video was developed with a focus on mobilization and training of volunteers. A set of written guidelines for training/orientation of volunteers were also developed and
disseminated to all DHOs along with a copy of the video. Guidelines were meant for
distribution to all volunteers and it was suggested that orientation session should be
conducted during which the guidelines could be discussed and the video could be viewed
jointly. In some of the most remote areas of the country, where regular television
transmission was not possible, tribal leaders helped disseminate the training video
through their satellite dish antennas. A few days before the 1st NID, television and radio
announcements were started, informing people about the significance and date of the 1st
NID. With the help of Rotary, a television spot had been developed which was telecast
during the last three days prior to April 27. A private television channel was motivated to
give air time at a very nominal cost for the telecast of the orientation video from six
stations covering all the major cities of the country. The channel also produced some
public services announcements for the 1st NID and telecast them free of cost. Appeals by
some well known people, requesting parents to bring their children for Polio drops on the
1st NID were also produced. All stations of the Pakistan Broadcasting Corporation (PBC)
were transmitting up to 20 spots, a day, including some in regional languages, informing
people about the 1st NID. Newspapers advertisements were also being placed regularly in
different publications. Frequent press releases were issued by political leaders, high
ranking government officials and the Federal EPI Cell to keep the people informed about
the program. Handbills with detailed information on the Polio days and the routine
immunization program were distributed to all Polio centers for distribution to parents
after their children has been given Polio drops. Efforts were made to inform and mobilize
the different sectors of the government, with the result that the District Management
played an effective role in the program. Teachers from the education department helped
in giving vaccine to children in most areas. The Communication Strategy laid a lot of emphasis on involving the communities and getting support from them. At the end of the 1st NID on April 27, it was obvious that in less than three weeks, the Communication Strategy had succeeded in; mobilizing hundreds of social groups to support the program, motivating several hundred thousand workers to volunteer their time for giving Polio drops to children, convincing more than 10 million families to bring their children for Polio drops. In the following NID’s, other materials developed through different sources included; one television spot, several appeals for TV from well known personalities, Radio messages, and Newspapers advertisements.

2.9 A case Study by Pakistan Medical and Research Council (PMRC)

In 1986, the Pakistan Medical Research Council (PMRC) Peshawar conducted a study to evaluate the extent of child immunization in Budhni village (20 km from Peshawar). It was found that only 5 per cent of children under the 5 years age have been immunized (PMRC 1987). Following this an EPI center was established in the village and by 1990, 59 per cent of children under 5 year’s age were recorded as fully immunized (PMRC 1990). The main reason for the slow progress of this initiative was lack of information on the part of mothers to bring apparently healthy infants to a health care centers. However in 1992 when a door to door campaigns and an intense motivation program was undertaken the coverage for children aged 5 years or less was increased to 94.6 per cent (PMRC 1992). The results of the vaccine coverage assessment of coverage completed in January 1998 following NID completed on December 27, 1997, shows that primary reasons included not being informed about the NID, the village or home not being visited during the NID, strike (AJK), child traveling, and no male to take the child
to vaccination center. However in order to inform the people about NID’s, the most frequent and best methods of informing the people were Mosque, Loudspeaker, Television and Radio (National Institute of Health 1989).

2.10 Comparative Impact of Television in Innovation Decision Process

The findings of the aforementioned M.Phil study conducted by Bakht Rawan at Mass Communication Department of the Allama Iqbal Open University in the year 2004 indicated that awareness about family planning in high in the country. People are also convinced that family planning is an effective measure for population control. Majority of the people also perceives the growing population with negative effects for the country.

At the knowledge and persuasion stages of the innovation-decision process regarding family planning television and interpersonal channels both played significant role. However, on the remaining two stages, viz. decision and confirmation these sources of communication were found not very effective. In general there was no difference in the impact of television versus interpersonal communication channels at the four stages of the process of innovation decision. With specification between gender, education, residence, profession, and number of living children some variations in the impact of the two sources noticed. Even by partial ling out the effects of cosmopolite ness of the respondents the relationships between the two independent variables with the four criterion variables, viz. knowledge, persuasion, decision, and confirmation were not influenced. It remained the same.

From results of this study it is concluded that the respondents did not make use of the two sources of information at the decision and confirmation stages. There are several expected reasons for this behavior. For example, (1) at the ‘decision’ stage the use of any
source of information is not very effective, because this is an overt behavior more than a mental process. Individual makes his decision at the 'persuasion' stage and at this stage communication sources can play a role, (2) the issues is very much value sensitive and the respondents did not want to socially isolate themselves by knowing others that he/she has gone for what is socially regarded as not very good (the Spiral of Silence Theory favors this explanation), (3), they did not make use of the two sources of communication for this purpose because they did not want to create psychological/mental tension for themselves by exposure of any contradictory information. All consistency theories advocate this version.

From results of this study it is also concluded that the generalization made by Rogers about the role of mass media and interpersonal communication channels regarding awareness and persuasion is not workable for family planning (innovation) in the area of Peshawar. Family planning is a multidimensional issue. Various social, economic, political and religious factors are related to adoption/rejection of family planning.

2.11 Message Consumption and Adoption of Agriculture Innovations in NWFP

A Ph D research work submitted in the year 2005 by Mirza Jan of Mass Communication Department, University of the Punjab, set out to examine the adoption of agricultural innovations. The theoretical framework involving the concepts of agricultural innovation and survey research was enhanced to test the Rogers and Shoemaker's (1973) model diffusion of innovation. The preliminary assumptions of the "message consumption and adoption of agricultural innovations in NWFP, Pakistan" was also based on farmers' knowledge, attitude and practice level. Face-to-face interview
technique was used for gathering data. Statistical tests were used according to the nature of the study's objectives.

The findings of this empirical study shown that farmers are significantly exposed to messages of radio and TV. It was assumed that radio and TV equally provide agriculture information to the farmers but the results assessed that farmers were more frequently exposed to TV as compare to radio. The predicted weekly time spend on listen to radio and watching TV index indicated equal time spent. The results revealed that there was a significant difference between the competence score of radio and TV agriculture campaign. TV, in the sample score was higher than radio. In order to understand the exact nature of interest, the results showed that farmers equally have taken interest in radio, TV agro-campaign. This empirical study explored the independent variables like radio, TV, friend/relative, extension agents, sign board newspaper and, poster as a source of information, which revealed likely no significant difference in average. The results shown the performance of various sources (as earlier mentioned) of information concluded that message understanding is insignificant about agriculture innovation. According to the research farmers have equally taken interest in TV's agricultural programs. It was also concluded that radio agricultural programs have likely equal chance of listening. It was also found that the respondent's satisfaction with the amount of coverage of radio and T.V. is same, but they showed through their responses that newspapers coverage to agricultural innovations is not satisfied.

The first formulated hypothesis "greater the exposure to the messages of agricultural innovations, the greater is the knowledge, attitude and, practice level" has found accepted in the aforementioned research.
Moreover, to see that “if the farmers don’t adopt the innovation” then what the reasons were? The perceived perceptions of the farmers explored that a great majority of the respondents ranked the reasons as: “they have no money” for purchasing these innovations number first. Some of them have chalked out, “it is expensive”, “it is not easily available” and,” the innovations are not effective” respectively. The above conclusion also endorsed the Critics argument of Peter Nowak, 1983, that this perspective ignores extra-personal factors such as a farmer’s ability to purchase the innovation, as well as relevance of the measure for the particular farm operation. The empirical investigation revealed that it was likely that farmers’ frequency of listening and watching pesticides/insecticide advertisements comes with equal means. They equally listen and watch the pesticides/insecticide advertisements regarding agricultural innovations.

Furthermore, the phenomenon of interpersonal communication, extension agents, numberdaars and, co-farmers was also explored. Interaction with co-farmers and numberdaar was found significant as compare to extension agents according to univariate frequency. Statistical calculation showed that co-farmer has great performance. Fifty seven percent of the farmers fall in the response category of “always contact as they fully understand the tips given by co-farmers. It led to the conclusion that the notion of two-step flow of information about agricultural innovations was highly endorsed through the obtained findings. It might be said that interpersonal contact play a significant role in diffusion of agricultural innovations and farmers easily converge towards adoption. The second hypothesis” farmers interconnected through interpersonal communication is likely to have a higher means of total agricultural innovations' adoption score than those who are not” is supported by the findings.
This study supported by the Ryan and Gross (1943) findings that suggest the important role of interpersonal networks in the diffusion process. The farmer-to-farmer exchange of their personal experiences with hybrid seed was at the heart of diffusion.

The empirical evidence illustrated that majority of the total sample “less often” spent time in confirmation of decision, while 21.2% were those who “often” spend time on the case, and 24.2% never confirm their decision. The response to the farmers’ link with extension agents for technical innovations’ discussion and suggestions was not significant. It was concluded that there is no significant link between farmers and extension agents. Results revealed that change agents might not motivate the farmers. It is evident that majority of the farmers were falling into the low level of motivation. It showed the third research has not been accepted by the findings that are “does media as a source of reinforcement motivates farmers for adopting innovations? One of the major predictor variables in the instrument was government incentive. Statistical calculations showed that farmers were not satisfied with the government’s incentives.

The effectiveness of PTV 2 assessed that payment of attention towards “Kisaan Time of PTV 2”, comes with equal average. It is obvious that there was significant difference in percentage of paying attention towards “Kisaan Time of PTV 2”, Result demonstrated that there was a significant difference in the mean of technological innovations i.e. cultivator, front and back blade, thresher, harvester, spray machine, gobaral, plough and, tractor, on the index of their use. It can be concluded that cultivator, front and back blade, and, tractor, on the index of their use were at the high percentage of score. This results has accepted the third hypothesis “the highly the exposure to agriculture technological innovations, the highly will be the relevant index of use”.
This study concluded that it was unlikely that arrangement of training facilities by research centers in NWFP comes with equal average. Refresher course and radio talk were the favorite among other activities of extension centers. It further prescribed that there was also significant difference in arrangement of training facilities by research centers in NWFP.

Research results have shown that farmers, who can cope with very high levels of uncertainty about a new innovation, can understand and apply complex technical knowledge, and possess both the willingness to risk failure and the resources to absorb the possible costs of that failure. It was found that in the innovators group a very little number were the ones who carry new ideas of agricultural innovations. The second group has a reputation for making careful and considerate adoption decision. This group of early adopters of the farmers comes with 16.2%. They have adopted new methods and innovations through the consultancy of potent opinion leaders/peers. The additional analyses show that 19.6% of the target sample fallen into early majority adopters. They were the deliberate evaluators of the agricultural innovations. Late majority category findings showed for about 21.8% of the total sample. The late majority views the presence of any uncertainty that surrounds an innovation as a possible drain on their very limited resources. Majority of the farmers falls in Laggards group. They were tending to adopt agricultural innovations at a point when the innovation is being replaced by something newer.

2.12 Impacts of PBC Peshawar Centre Immunization Campaign 1996-98

A research thesis on the aforementioned topic revealed that media’s impact (Radio in this case) in terms of immunization of children on parents sharing different
socioeconomic status is not uniform. Still it will be very hard to believe that Radio is solely responsible for the high rate of immunization practice in the lower socioeconomic group in general and in the higher socioeconomic group in particular (immunization practice as per this study is 92 per cent in higher socioeconomic group and 70 per cent in lower socioeconomic group). The clear and visible standard of living, difference in the level of education, difference in the amount of stored information or previously acquired background knowledge and the nature of mass media that it served the dominant elite are some of the factors responsible for the greater rate of immunization in the high socioeconomic group.

It is also important to mention that owing to the globally accepted importance of immunization of children coupled with constant media bombardment, extensive and frequent media support to the UNICEF launched immunization program, this gap of knowledge is not too widened but still appeared in this study.

Radio seems to be responsible, to a greater extent, for the immunization of children in the lower socioeconomic group. Due to its cheaper price, radio has been a popular and prime source of information in the lower socioeconomic group (80 per cent respondents have radio sets). Seemingly, the impact of PBC Peshawar Centre immunization campaign is greater on parents of high socioeconomic group but this greater rate as earlier mentioned is not the sole result of radio’s campaign for immunization. This difference in the rate of immunization of children can be either due to access of higher socioeconomic class to a number of television channels including, but not limited to, newspapers, magazines, relevant literature, satellite and internet or due to the pressure of the media induced/created general environment where even those who
have dissent against any of the media created environment have no other way but to join though gradually and belatedly, the general flow or as pointed out by Noelle-Naumann’s Spiral of Silence model of public opinion 1974 (Neumann’s, 1974 p.68).

In this study, radio a cheaper medium of information is found to be much more accessible to the parents of low socioeconomic group. On the other hand, parents of high socioeconomic owing to their sound economic base, high literacy, access to a number of channels and a fear of being isolated, supports the dominant view enabling them to maintain the higher rate of immunization.

In this study the knowledge-gap is also visibly appeared and hence the 'knowledge-gap hypothesis' proved.

2.13 A Study of Immunization Coverage in Three District of NWFP

A study of immunization coverage in three district of NWFP in early 90's shows that EPI despite of 16 years in action is still lacking in establishing a well organize information/motivation program to educate community about importance of immunization e.g. 54 per cent mothers of children (who failed to get immunized) pointed out lack of information and motivation a main reason for immunization failure. Similarly 46 per cent mothers responded obstacles like vaccinator absent or place and time of immunization inconvenient or she too busy to bring her child for vaccination were the reasons for immunization failure. When community does not have information/motivation program to educate them about immunization or any easy access to the immunization program, the coverage will be naturally low (Ahmad, 1994 p.8).

This study reveals information failure in three districts as the main cause of immunization failure followed by motivation. Similarly some other studies including
Father's knowledge 'attitude' and practices related to measles and Neo-Natal Tetanus suggests that the low coverage of tetanus vaccination is due to the lack of knowledge. That is why parents' incomplete and vague information about child's disease and disease history causes serious problems to the child's health (Hassan, 1995 p.6). Hence the need to bridge the gap between health educators and the parents and make them fully informed and provides latest knowledge regarding immunization process.

2.14 Gender: A Difficult Variable to Analyze in Communication Effects Process

This study by Dr. Farish Ullah Yousafzai, Assistant Professor in the Department of Journalism and Mass Communication, Gomal University, Dera Ismail Khan, Pakistan explore whether there are effects at all in the area of social communication campaigns launched through different media by various ministries in Pakistan. These campaigns directly address the individuals to adopt some specific behaviors being advocated for the individual and national benefits. It also examined whether the three integrated components of the effects process, i.e. knowledge, attitude, and behavior are differentiated on the basis of gender. Another objective of the study is to identify different semantic, structural, religious, and socio-psychological barriers that adversely affect the success of social communication campaign. It also addressed that whether the relationship among these integrated elements of the effects process is consistent/inconsistent. The aforementioned study revealed the following facts:

1. There is an effect at all at knowledge level in the selected area.

2. As compared to radio, more respondents understand the messages disseminated through television.

3. There is no significant discrimination on the basis of gender.
4. Religious establishment has taken a very strong stance against the concept of family planning. Therefore majority of the respondents regard this practice socially detestable and sin.

5. Difference among the three levels is the direct result of the several semantic, structural, socio-religious, and psychological barriers (Yousafzai, 2004 p. 48).

2.15 Assessment of Barriers to Immunization Services in Pakistan

The findings of the study Assessment of Barriers to Immunization Services in Pakistan conducted in cooperation with WHO, UNICEF, and National EPI Program, National Institute of Health, Ministry of Health, Government of Pakistan revealed that the vaccination status of children is dependent upon the education and awareness/knowledge level of parents, especially mothers. It further observed that awareness/knowledge level of parents depends upon their demographic (such as occupation and education) and media profile. The study says that the overall attitude of the general public is positive towards vaccination and there is no serious issue attached with the acceptability of vaccinators among the general public. However, parents of non-vaccinated children tend to show a greater negative disposition.

2.16 World Health Organization (WHO) Study

World Health Organization (WHO), in collaboration with the Center for Diseases Control and Prevention, Atlanta, USA and EPI-Pakistan carried out an investigation of virologically confirmed poliomyelitis cases in NWFP, Sindh and Punjab during October 8 and November 19, 1997. The findings of that report in all the three provinces suggest that lack of information regarding the EPI was one of the factors which prevented the parents to immunize their children.
Notes

1 The Payne Fund Studies undoubtedly presented a reasonable valid picture of the influences of the movies of the 1920s on the youth of that period. The films were an influence on attitude; they provided models for behavior; they shaped interpretations of life. They probably had as many pro social influences (or at least harmless influences) as those that disturbed adults of the time. The Payne Fund Studies were clearly the pioneer efforts that established the field of media research within the perspective of science.

2 The people’s choice remains one of the most sophisticated survey research studies in the history of social science. Its place in the development of mass communication theory is undisputed. It forced communication theorists to reconsider the mass society concept, the powerful influence idea, the role of social category membership, and the significance of interpersonal ties. Few studies in the history of mass communication research have had such impact.

3 For a summary of recent initiatives and recommendations for future efforts from a public health perspective, see the special section “Health communication for the 1990s” in the May-June (1990) issue of Public Health Reports and a Public health Service Publication: Mass Media and Health (1990).

4 Information by the office of the Deputy Director EPI, NWFP.

5 Ibid.

6 The model is based upon the belief that people are uneasy-suffer dissonance-if they feel themselves to be isolated with regard to general opinion and attitude: that they are the odd one out. In response to a situation, we tend to ask, what do other people think; what is the majority or dominant opinion? A person may find ‘that the views he holds are losing ground; the more this appears to be so, the more uncertain he will become of himself, and the less he will be inclined to express his opinion.
CHAPTER III

Theoretical Framework

The theoretical framework of this research work is generally based on the effects approach of mass communication (as in 1.6 Chapter 1 “Understanding Effects Research / Study”, 2.2 Chapter 2 “History of effects study" and 3.1 Chapter 3 “Effects approach of mass communication”). However, it will primarily focus on two theories of mass communication. One the knowledge-gap hypothesis\(^1\) by Tichenor, Donohue, and Olien, second diffusion of innovations\(^2\) by Rogers and Shoemaker’s. Moreover, theories like Cultivation\(^3\) by George Gerbner, Agenda setting\(^4\) by McCombs and Shaw, Media hegemony\(^5\) and the Spiral of silence\(^6\) by Elisabeth Noelle-Neumann, is also stitched to the theoretical framework (Severin, 1992 pp 203-80).

3.1 Effects Approach of Mass Communication

The most common general perspective in studying the media is a search for the effects of exposure to mass communication (Harris, 1999 p.17). That is why the entire study of mass communication is based on the premise that the media have significant effects, yet there is little agreement on the nature and extent of these assumed effects. Media ‘effects’ are simply the consequences of what the mass media do, whether intended or not. The expression ‘media power’, on the other hand, refers to a general potential on the part of the media to have effects, especially of planned kind (McQuail, 1987 p. 326 & 333).

There are several ways of differentiating between the types of media effect. Klapper (1960) distinguished between conversion, minor change and reinforcement—respectively: change of opinion or belief according to the intention of the communicator; change in
form or intensity of cognition, belief or behavior; and confirmation buy the receiver of an existing belief, opinion or behaviour pattern. The media can:

1. cause intended change (conversion);
2. cause unintended change;
3. cause minor change (form or intensity);
4. facilitate change (intended or not);
5. reinforce what exists (no change);
6. prevent change.

Similarly (Medoff, 1998) says; communication may have three different kinds of effects on an audience: cognitive, emotional, and behavioral. Cognitive effects are those that occur when the audience gains knowledge or information. Emotional effects are those that cause an attitudinal or mode change in the audience. Third effects, behavioral change, occur when the audiences actually change its behavior in some measurable way, such as buying a new brand of detergent or voting for politician. Further explanation of the Effects Approach has earlier been discussed (in 1.5 and 2.2 Chapter 1 and Chapter 2 respectively).

3.2 The Knowledge-Gap Hypothesis

An unexpected and undesired possibility is that mass communication might actually have the effect of increasing the difference of gap in knowledge between members of different social classes. This phenomenon, called the "knowledge-gap hypothesis", was first proposed in 1970 in an article "Mass Media Flow and Differential Growth in Knowledge" by Tichenor, Donohu, and Olien.

The authors state the knowledge-gap hypothesis this way:
As the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease (Severin, 1992 p.).

Similarly, Rogers (1976) points out that information results not only in increasing knowledge gaps, but also in gaps concerning behaviour and attitude. Accordingly, he changes the term to 'the communication effects gap'. He also remarks that mass communication is not the only cause of the gaps. Communication directly between individuals may also have similar effects. He finally underlines the fact that the gaps need not to be caused exclusively by different levels education - other factors may also contribute to the creation of such gaps.

3.3 Diffusion of Innovations

Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. It is a special type of Communication, in that the messages are concerned with new ideas. Communication is a process in which participants create and share information with one another in order to reach a mutual understanding. This definition implies that communication is a process of convergence (or divergence) as two or more individuals exchange information in order to move toward each other (or apart) in the meanings that they give to certain events. We
think of communication as a two-way process of convergence, rather than as a one-way, linear act in which one individual seeks to transfer a message to another in order to achieve certain effects (Rogers and Kincaid, 1981). A linear conception of human communication may accurately describe certain communication acts or events involved in diffusion, such as when a change agent seeks to persuade a client to adopt an innovation. Here persuasion refers as a change in opinion, attitude, or behavior due to exposure (Tellis, 2004 p.112). But when we look at what came before such an event, and at what follows, we often realize that the event is only one part of a total process in which information is exchanged between the two individuals. For example, the client may come to the change agent with a problem, and the innovation is recommended as a possible solution to this need. The change agent-client interaction may continue through several cycles, as a process of information exchange. So diffusion is a special type of communication, in which the messages are about a new idea. This newness of the idea in the message content gives diffusion its special character. The newness means that some degree of uncertainty is involved in diffusion. Uncertainty is the degree to which a number of alternatives are perceived with respect to the occurrence of an event and the relative probability of these alternatives. Uncertainty implies a lack of predictability, of structure, of information. In fact, information is a means of reducing uncertainty. Information is a difference in matter-energy that affects uncertainty in a situation where a choice exists among a set of alternatives (Rogers and Kincaid, 1981, p. 64). A technological innovation embodies information and thus reduces uncertainty about cause-effect relationships in problem solving. For instance, adoption of pesticides reduces uncertainty about increase in crop diseases.
Diffusion is a kind of social change, defined as the process by which alteration occurs in the structure and function of a social system. When new ideas are invented, diffused, and are adopted or rejected, leading to certain consequences, social change occurs. Of course, such change can happen in other ways, too, for example, through a political revolution, through a natural event like a drought or an earthquake, or by means of a government regulation.

Some authors restrict the term "diffusion" to the spontaneous, unplanned spread of new ideas, and use the concept of "dissemination" for diffusion that is directed and managed. Many technologists believe that advantageous innovations will sell themselves, that the obvious benefits of a new idea will be widely realized by potential adopters, and that the innovation will therefore diffuse rapidly. Most innovations, in fact, diffuse at a disappointingly slow rate. No, technological innovations are not always diffused and adopted rapidly. Even when the innovation has obvious, proven advantageous.

**Four main elements in the Diffusion of Innovations**

Previously we defined diffusion as the process by which an innovation is communicated through certain channels over time among the members of a social system. The four main elements are the innovation, communication channels, time, and the social system. The following description of these four elements in diffusion constitutes an overview of the main concepts.

1. *The innovation*

An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption. It matters little, so far as human behavior is concerned, whether or not an idea is objectively new as measured by the lapse of time
since its first use or discovery. The perceived newness of the idea for the individual
determines his or her reaction to it. If the idea seems new to the individual, it is an
innovation.

Newness in an innovation need not just involve new knowledge. Someone may
have known about an innovation for some time but not yet developed a favorable or
unfavorable attitude toward it, nor have adopted or rejected it. "Newness" of an
innovation may be expressed in terms of knowledge, persuasion, or a decision to adopt.

*Technological innovations, information, and uncertainty*: a technology is a design for
instrumental action that reduces the uncertainty in the cause-effect relationships involved
in achieving a desired outcome. A technology usually has two components: (1) a
hardware aspect, consisting of the tool that embodies the technology as a material or
physical object, and (2) a software aspect, consisting of the information base for the tool.

*Technology clusters*. An important conceptual and methodological issue is to determine
the boundaries around a technological innovation. The practical problem is how to
determine where one innovation stops and another begins. If an innovation is an idea that
is perceived as new, this boundary between innovations ought to be determined by the
potential adopters who do the perceiving. A technology cluster consists of one or more
distinguishable elements of technology that are perceived as being closely interrelated.

Some change agencies promote a package of innovations because they find that the
innovations are thus adopted more rapidly. An example of technology cluster was the
package of rice- or wheat-growing innovations that led to the Green Revolution in the
Third World countries of Latin America, Africa, and Asia. In addition to the so-called
miracle varieties of rice or wheat, the cluster included chemical fertilizers, pesticides, and
thicker planting of the seeds.

*Characteristics of Innovations*

The characteristics of innovations, as perceived by different scholars help to explain their different rate of adoption.

1. Relative advantage is the degree to which an innovation is perceived as better than the idea it supersedes. The degree of relative advantage may be measured in economic terms, but social prestige, convenience, and satisfaction are also important factors. It does not matter so much if an innovation has a great deal of objective advantage. What does matter is whether an individual perceives the innovation as advantageous. The greater the perceived relative advantage of an innovation, the more rapid its rate of adoption will be.

2. Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters. An idea that is incompatible with the values and norms of a social system will not be adopted as rapidly as an innovation that is compatible. The adoption of an incompatible innovation often requires the prior adoption of a new value system, which is relatively slow process. An example of an incompatible innovation is the use of contraceptive methods in countries where religious beliefs discourage use of family planning, as in Muslim and Catholic nations.

3. Complexity is the degree to which an innovation is perceived as difficult to understand and use. Some innovations are readily understood by most members of a social system; others are more complicated and will be adopted more slowly. New ideas that are simpler to understand are adopted more rapidly than innovations that require the adopter to develop new skills and understandings.
4. Trialability is the degree to which an innovation may be experimented with on a limited basis. New ideas that can be tried on the installment plan will generally be adopted more quickly than innovations that are not divisible. Ryan and Gross (1943) found that every one of their Iowa farmer respondents adopted hybrid seed corn by first trying it on a partial basis. If the new seed could not have been sampled experimentally, its rate of adoption would have been much slower. An innovation that is trialable represents less uncertainty to the individual who is considering it for adoption, as it is possible to learn by doing.

5. Observability is the degree to which the results of an innovation are visible to others. The easier it is for individuals to see the results of an innovation, the more likely they are to adopt it. Such visibility stimulates peer discussion of a new idea, as friends and neighbors of an adopter often request innovation-evaluation information about it. Innovations that are perceived by individuals as having greater relative advantage, compatibility, trialability, observability, and less complexity will be adopted more rapidly than other innovations. Past research indicates that these five qualities are the most important characteristics of innovations in explaining the rate of adoption. Re-invention or the first several decades of diffusion research, it was assumed that an innovation was an invariant quality that did not change as it diffused. In the 1970s, diffusion scholars began to study the concept of re-invention, defined as the degree to which an innovation is changed or modified by a user in the process of its adoption and implementation. Some researchers measure re-invention as the degree to which an individual's use of a new idea departs from the mainline version of the innovation that was originally promoted by a change agency (Eveland and others, 1977). Once scholars became aware of the concept
of re-invention and began to measure it, they began to find that a considerable degree of re-invention occurred for many innovations. Some innovations are difficult or impossible to re-invent; for example, hybrid seed corn does not allow a farmer much freedom to re-invent, as the hybrid vigor is genetically locked into the seed for the first generation in ways that are too complicated for a farmer to change. Certain other innovations are more flexible in nature, and they are re-invented by many adopters who implement them in a wide variety of different ways. An innovation is not necessarily invariant during the process of its diffusion. And adopting an innovation is not necessarily the passive role of just implementing a standard template of the new idea. Given that an innovation exists, communication must take place if the innovation is to spread.

2. Communication Channels

Communication is defined as the process by which participants create and share information with one another in order to reach a mutual understanding. Diffusion is a particular type of communication in which the message content that is exchanged is concerned with a new idea. The essence of the diffusion process is the information exchange through which one individual communicates a new idea to one or several others. At its most elementary form, the process involves (1) an innovation, (2) an individual or other unit of adoption that has knowledge of the innovation or experience with using it, (3) another individual or other unit that does not yet have experience with the innovation, and (4) a communication channel connecting the two units. A communication channel is the means by which messages 'et from one individual to another. The nature of the information-exchange relationship between a pair of individuals determines the conditions under which a source will or will not transmit the
innovation to the receiver, and the effect of the transfer.

Mass media channels are often the most rapid and efficient means to inform an audience of potential adopters about the existence of an innovation, that is, to create awareness-knowledge. Mass media channels are all those means of transmitting messages that involve a mass medium, such as radio, television, newspapers, and so on, which enable a source of one or a few individuals to reach an audience of many. On the other hand, interpersonal channels are more effective in persuading an individual to accept a new idea, especially if the interpersonal channel links two or more individuals who are similar in socioeconomic status, education, or other important ways. Interpersonal channels involve a face-to-face exchange between two or more individuals.

**Heterophily and Diffusion.**

Homophily is the degree to which two or more individuals who interact are similar in certain attributes, such as beliefs, education, social status, and the like. In a free choice situation, when an individual can interact with any one of a number of other individuals, there is a strong tendency to select someone who is very similar.

Homophily occurs because similar individuals belong to the same groups, live or work near each other, and share the same interests. This physical and social propinquity makes homophilous communication more likely. Such communication is also more likely to be effective, and thus to be rewarding. More effective communication occurs when two or more individuals are homophilous. One of the most distinctive problems in the diffusion of innovations is that the participants are usually quite heterophilous. A change agent, for instance, is more technically competent than his or her clients. This difference frequently leads to ineffective communication, as the participants do not talk the same
language. In fact, when two individuals are identical regarding their technical grasp of an innovation, no diffusion can occur as there is no new information to exchange. The very nature of diffusion demands that at least some degree of heterophily be present between the two participants. Ideally, they would be homophilous on all other variables (education and social status, for example) even though they are heterophilous regarding the innovation. Usually, however, the two individuals are heterophilous on all of these variables because knowledge and experience with an innovation are highly related to social status, education, and the like.

3. Time

Time is a third element in the diffusion process. Much other behavioral science research is timeless in the sense that the time dimension is simply ignored. The inclusion of time as a variable in diffusion research is one of its strengths, but the measurement of the time dimension (often by means of the respondents' recall) can be criticized. The time dimension is involved in diffusion (1) in the innovation-decision process by which an individual passes from first knowledge of an innovation through its adoption or rejection, (2) in the innovativeness of an individual or other unit of adoption -- that is, the relative earliness/lateness with which an innovation is adopted -- compared with other members of a system, and (3) in an innovation's rate of adoption in a system, usually measured as the number of members of the system that adopt the innovation in a given time period.

The Innovation-Decision process

The innovation-decision process is the process through which an individual (or other decision-making unit) passes from first knowledge of an innovation to forming an
attitude toward the innovation, to a decision to adopt or reject, to implementation and use of the new idea, and to confirmation of this decision. We conceptualize five main steps in the innovation-decision process: (1) knowledge, (2) persuasion, (3) decision, (4) implementation, and (5) confirmation. Knowledge occurs when an individual (or other decision-making unit) learns of the innovation's existence and gains some understanding of how it functions. Persuasion occurs when an individual (or other decision-making unit) forms a favorable or unfavorable attitude toward the innovation. Decision occurs when an individual (or other decision-making unit) engages in activities that lead to a choice to adopt or reject the innovation. Implementation occurs when an individual (or other decision-making unit) puts an innovation into use. Re-invention is especially likely to occur at the implementation stage. Confirmation occurs when an individual (or other decision-making unit) seeks reinforcement of an innovation-decision that has already been made, but the individual may reverse this previous decision if exposed to conflicting messages about the innovation.

Innovation-decision process is an information-seeking and information-processing activity in which an individual obtains information in order to decrease uncertainty about the innovation. At the knowledge stage, an individual mainly seeks software information that is embodied in the technological innovation, information that reduces uncertainty about the cause-effect relationships involved in the innovation's capacity to solve an individual's problem. At this stage the individual wants to know what the innovation is and how and why it works. Mass media channels can effectively transmit such software information. But increasingly at the persuasion stage, and especially at the decision stage, an individual seeks innovation-evaluation information in order to reduce
uncertainty about an innovation's expected consequences. Here an individual wants to
know the innovation's advantages and disadvantages in his or her own situation.
Interpersonal networks with near-peers are particularly likely to convey such evaluative
information about an innovation. Subjective evaluations of a new idea from other
individuals are especially likely to influence an individual at the decision stage, and
perhaps at the confirmation stage.

The innovation-decision process can lead to either adoption, a decision to make full
use of an innovation as the best course of action available, or to rejection, a decision not
to adopt an innovation. Such decisions can be reversed at a later point; for example,
discontinuance is a decision to reject an innovation after it has previously been adopted.
Discontinuance may occur because an individual becomes dissatisfied with an
innovation, or because the innovation is replaced with an improved idea. It is also
possible for an individual to adopt an innovation after a previous decision to reject it.
Such later adoption and discontinuance occur during the confirmation stage of the
innovation-decision process.

The innovation-decision process involved time in the sense that the five steps
usually occur in a time-ordered sequence of knowledge, persuasion, decision,
implementation, and confirmation. Exceptions to the usual sequence of the five stages
may occur, such as when the decision stage precedes the persuasion stage. The
innovation-decision period is the length of time required to pass through the innovation-
decision process.

So time is an important dimension in the innovation-decision process.
Innovativeness and Adopter categories

Innovativeness is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than the other members of a system. Rather than describing an individual as "less innovative than the average member of a social system," it is handier and more efficient to refer to the individual as being in the "late majority" or in some other adopter category. Diffusion research shows that members of each of the adopter categories have a good deal in common. If the individual is like most others in the late majority category, he or she is of low social status, makes little use of mass media channels, and learns about most new ideas from peers via interpersonal channels. In a similar manner, we shall present a concise word picture of each of the other four adopter categories. Adopter categories, the classifications of members of a social system on the basis of innovativeness, include: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards.

Innovators are active information-seekers about new ideas. They have a high degree of mass media exposure and their interpersonal networks extend over a wide area, reaching outside of their local system. Innovators are able to cope with higher levels of uncertainty about an innovation than are other adopter categories. As the first to adopt a new idea in their system, they cannot depend upon the subjective evaluations of the innovation from other members of their system.

The measure of innovativeness and the classification of a system's members into adopter categories are based upon the relative time at which an innovation is adopted.

Rate of Adoption

There is a third specific way in which the time dimension is involved in the
diffusion of innovations. The rate of adoption is the relative speed with which members of a social system adopt an innovation. When the number of individuals adopting a new idea is plotted on a cumulative frequency basis over time, the resulting distribution is an S-shaped curve. At first, only a few individuals adopt the innovation in each time period (such as a year or a month, for example); these are the innovators. But soon the diffusion curve begins to climb, as more and more individuals adopt in each succeeding time period. Eventually, the trajectory of adoption begins to level off, as fewer and fewer individuals remain who have not yet adopted the innovation. Finally, the S-shaped curve reaches its asymptote, and the diffusion process is finished.

4. A Social system

A social system is defined as a set of interrelated units that are engaged in joint problem solving to accomplish a common goal. The members or units of a social system may be individuals, informal groups, organizations, and/or subsystems. All members cooperate at least to the extent of seeking to solve a common problem in order to reach a mutual goal. This sharing of a common objective binds the system together.

Diffusion occurs within a social system. The social structure of the system affects the innovation's diffusion in several ways. The social system constitutes a boundary within which an innovation diffuses. Here we deal with how the system's social structure affects diffusion, the effect of norms on diffusion, the roles of opinion leaders and change agents, types of innovation-decisions, and the consequences of innovation. These issues involve relationships between the social system and the diffusion process that occurs within it.
Types of Innovation-Decisions

Innovations can be adopted or rejected (1) by an individual member of a system, or (2) by the entire social system, which can decide to adopt an innovation by a collective or an authority decision.

1. Optional innovation-decisions are choices to adopt or reject an innovation that are made by an individual independent of the decisions of the other members of the system. Even in this case, the individual's decision may be influenced by the norms of the system and by interpersonal networks.

2. Collective innovation-decisions are choices to adopt or reject an innovation that are made by consensus among the members of a system. All of the units in the system usually must conform to the system's decision once it is made.

3. Authority innovation-decisions are choices to adopt or reject an innovation that are made by a relatively few individuals in a system who possess power, status, or technical expertise. The individual member of the system has little or no influence in the authority innovation-decision; he or she simply implements the decision. There is yet a fourth type of innovation-decision that is a sequential combination of two or more of the three types we just discussed. Contingent innovation-decisions are choices to adopt or reject that can be made only after a prior innovation-decision. For example, an individual member of a social system may be free to adopt or not adopt a new idea only after his/her system's innovation-decision.

Consequences of Innovations

Consequences are the changes that occur to an individual or to a social system as a result of the adoption or rejection of an innovation. There are at least three
classifications of consequences:

1. Desirable versus undesirable consequences, depending on whether the effects of an innovation in a social system are functional or dysfunctional.

2. Direct versus indirect consequences, depending on whether the changes to an individual or to a social system occur in immediate response to an innovation or as a second-order result of the direct consequences of an innovation.

3. Anticipated versus unanticipated consequences, depending on whether the changes are recognized and intended by the members of a social system or not.

Change agents usually introduce innovations into a client system that they expect will have consequences that will be desirable, direct, and anticipated. But often such innovations result in at least some unanticipated consequences that are indirect and undesirable for the system's members. For instance, the steel ax was introduced by missionaries to an Australian aborigine tribe (Sharp, 1952). The change agents intended that the new tool would raise levels of living and material comfort for the tribe. But the new technology also led to a breakdown in family structure, the rise of prostitution, and "misuse" of the innovation itself. Change agents can often anticipate and predict an innovation's form, the directly observable physical appearance of the innovation, and perhaps its function, the contribution of the idea to the way of life of the system's members. But seldom are change agents able to predict an innovation's meaning, the subjective perceptions of the innovation by the clients.

3.4 Models to Explain Media Effects

In addition to models that describe the overall processes of communication, scholars have advanced other models to depict the effects that may result whenever
media communication occurs. Both micro- and macro analytical models have been used to describe the different types and levels of media effects, from purely individual effects to influences on groups of people or even society at large.

**Individual Effects**

One of the most useful models to illustrate direct effects on individuals from mass mediated communication is the Comstock psychological model. G. Comstock of Syracuse University and his associates (1978) developed this model to describe certain mental processes that occur while watching television. The model shows that the behavior of an individual viewer may be influenced by televised actions. A person learns some behavior by watching it presented on television, and the person may adopt the learned behavior, depending upon the salience (or psychological importance) and the personal excitement or motivation (called arousal in this model) gained by engaging in such behavior. The perceived reality of the mediated action is an important mitigating variable (i.e. the more realistic the media portrayal, the greater the psychological effect on the viewer and the greater the potential influence on the viewer’s behavior).

Another good example of a model that shows individual psychological effects from media communication is the Thorson cognitive processing model. Whenever cognitive (or mental) dimensions are under consideration, models are sometime rather complex; however, such complexities are necessary to accurately depict the many factors and steps involved in the processing of the mediated information. The Thorson model concentrates on the steps taken in the processing of television commercials. It takes into consideration the individual viewer’s personal interest in and attention to the commercial message, the person’s memory, and even language capacity, in determining the potential
effects of the messages. For example, a foreign student who does not yet have a thorough command of English would have more trouble processing commercials than a native speaker, and would not remember the commercial message as well.

**Social Effects**

As an example of a model of media effects at the societal level, we have media system dependency model advanced by M. L. DeFleur and S. Ball-Rokeach (1976). This model focuses on the relationships between the mass media entity (information system) and society itself (social system). It assumes that individuals in modern society become increasingly dependent upon mass media as a source of news and information. The level of the dependency relationship and the strength of the media effects hinge on the stability or instability of the society and the degree of societal importance placed upon mass media as an information source. Relationships and interactions among media, society, and audience are demonstrated, along with media effects. News in times of crisis serves as a good example of dependency theory in action. Whenever a crisis occurs (e.g., the death of a leader such as President of a state or the explosion of the space shuttle) people turn to the news media as a source of information and event comfort. Their dependency on the media increases during times of crisis.

These examples represent only a few of the large and growing number of pictorial models used to illustrate communication processes and effects from media communication.

### 3.5 Model for Health Communication Campaign

A great deal of communication that takes place every day falls under the label of planned communication; occasions when communication is consciously used to seek
more or less specific objectives. Such communication may be planned to a greater or a lesser degree and may range from a purposive communication between two persons to a large-scale health campaigns, involving several channels with many messages, aiming at millions of people (McQuail 1993 p.183).

Despite a great diversity of form, the communication campaign is often said to have the following characteristics:

1. it has a collective, organized source;
2. it is purposeful, guided by certain objectives, which may be very clearly specified;
3. there may be multiple objectives within the same campaign, for instance of influencing attitudes, opinions or behaviour;
4. it usually involves more than one channel and more than one message, with mass communication supplemented by personal contacts;
5. it may be targeted to specific group or a large publics, depending on the aims;
6. a campaign is an institutionalized activity, which should be legitimate in the public eye, conform to established norms and not be too controversial (McQuail 1993 p.184).

Typical of campaigns in modern societies, leaving aside commercial advertising, have been those conducted by political parties and candidates for election, public health and safety campaigns, fund-raising activities for charities or disaster relief, etc.

Amongst several possible models for communication campaign, the researcher has chosen Nowak and Warneryd (1985), which is a good example of the traditional type, starting as it does with the source’s aim and ending with the effects achieved by the campaign. It also has a normative character in that it suggests how to work systematically
in order to carry out an effective campaign.

An important idea underlying this model is that its elements are closely interrelated, such that a change in one element may cause change in others. This holds true especially when it comes to intended effect (the aim) of the campaign. When the campaigner changes the aim, all or some of the other elements will be altered. Also, the better and more precisely the aim is stated, the fewer options the campaigner has in defining other elements. It is far from unusual for one to have to change the aim during the campaign, for example when certain channels or messages prove to be less effective than initially supposed. The elements pictured can be described as follows.

Figure: 3.1 A model of a communication campaign (Nowak and Warneryd 1985).

The Intended effect: A major problem in many communication campaigns is that the goals (and related target groups) are not properly defined. The less good and goal definition, the smaller the chance to assess in the end whether the campaign has been
successful or not. A common mistake is less sophisticated campaigns is vastly to overestimate the potential effects of a campaign.

**Competing communication:** It is important for the effectiveness of the campaign that it will not be disturbed by competing or even contradictory communication. The campaigner has to be aware of possible counter messages in order to address them properly.

**The communication object:** A campaign is usually centered on a theme or an object, such as a healthier life-style or drunken driving. Different objects require different modes of communication. On the other hand, the campaigner usually has several options when it comes to defining the object. For example, ‘Aids’ may be defined in a campaign as a disease of specific groups or one from which everyone is at risk. The emphasis might also be on its deadly character or on the potential for treatment.

**The target population and the receiving group:** The target population is here defined as all those whom the campaign is intended to affect. It is often, though not always, identical with the receiving group. The sender may, for example, direct the message to a receiving group of ‘opinion leaders’ within the target population, with the intention of further dissemination amongst others. Target populations and receiving groups are sometimes classified according to ease of difficulty of reach. The most difficult groups in this respect are those who do not perceive the need for the message and are not normally exposed to communication channels.

**The channel:** As noted, there may be multiple channels for different types of message and different target groups. Mass media may initially put a theme on the agenda of discussion, while interpersonal communication may later be needed to influence
behavior.

*The message:* Typically, a central message can be shaped differently for different audiences. It may also change according to the stage of the campaign. For instance, an early stage may seek to develop awareness, while later stages seek to persuade or influence behaviors. A final phase may be designed to reassure those who have yielded to the campaign that they have acted wisely.

*The communicator/sender:* The term ‘sender’ may be used to denote the person(s) or institution(s) that stand behind a message without being a spokesperson. The effectiveness of the whole campaign will benefit from the involvement of a legitimate and trustworthy sender.

*Obtained effect:* The effects of a campaign can be intended and unintended, negative as well as positive. They can be cognitive (attention and knowledge gains), affective (relating to feelings, moods and attitudes) and co-native (behavior, activity and implementation).

### 3.6 Measuring Media Effects

This study of media effects typically assumes correlations amongst variables and a basic cause-and-effect relationship. It does not, however, completely disregard the role of chance in the unfolding of events. Social scientists employ statistical tools to account for chance while accepting the notion of causality. According to D. K. Perry:

Any discussion of media effects requires a concern with causation. Before a researcher can conclude that one concept is a cause of another, the researcher must establish three things. First, the presumed cause and the presumed effect must co vary, or go together. For example, people
who are heavily exposed to mediated violence should tend, on the average; to be either more or less aggressive than those who are less exposed...Second, the presumed cause must precede the presumed effect. Finally, a researcher must eliminate plausible rival (i.e., third variable) explanations for the observed co-variation of the presumed cause and effect. (1996, pp.25-26)

3.7 Major Variables

Variables are classified in terms of their relationship with one another. It is customary to talk about independent and dependent variables: independent variables are systematically varied by the researcher, while dependent variables are observed and their value presumed to depend on the effects of the independent variables. In other words, the dependent variables is what the researcher wishes to explain (Wimmer, 1991). So in this study the independent variable is polio immunization campaign. The dependent variable means the extent to which the idea regarding polio immunization are adopted or rejected by the high and low socioeconomic status parents in the area under study.

Moreover, the researchers often wish to account for or control variables of certain types (intervening variable) for the purpose of eliminating unwanted influences. These control variables are used to ensure that the results of the study are due to independent variables, not some other sources. However, a control variable need not always be used to eliminate an unwanted influence. On occasion, researcher uses a control variable such as age, sex or socioeconomic status to divide subjects into specific relevant categories (Wimmer, 1991 p.).

In this research work the researcher has also confronted with some intervening
variable such as Gender, Urban-rural residence, socioeconomic position, Newspaper, Literature and other forms of communication enabling the parents to get informed and even persuade to immunize their children against polio. In order to overcome this problem, the researcher has designed a question in the questionnaire to minimize the effect of the intervening variable.

In many situations, however, researcher understand that total control over all aspects of the research is accounted for in the interpretation of results because Mass Communication is regarded as a social subsystem that has exchange relationships with other subsystems or society. The concept of effect is then no longer to be understood in individual terms; that is, solely related to the recipient. This individualistic concept of effect includes all the processes that take place in the individual as the result of his resorting to mass media, during or after his "Consumption" of the media message (Kunezik, 1993 p.16).

**Independent variables:**

Exposure to PBC and PTV immunization campaign.

**Dependent variable:**

Awareness

Persuasion

Decision

Confirmation

**Control variable:**

General Attitude towards change

Gender
Urban-rural set up

Socioeconomic position

**Intervening variables:**

- Newspapers
- Magazines
- Literature
- Posters

Interpersonal Communication (Doctors/Health visitors/Friends).

All sources, other than Radio and Television responsible for providing information regarding polio immunization campaign.

### 3.8 Operationalization of the Concepts

**Key concepts**

There are a number of key concepts in this research work like, electronic media, polio immunization campaign, media effects, media campaign, health communication, parents, newspapers, magazines, traditional media, literature, posters, doctors, health visitors, friends, awareness, persuasion, decision, confirmation, socioeconomic status, laggards, late majority, early majority, early adopters, innovators some of them is already described at length earlier.

However, polio immunization campaign means campaign through PBC and PTV to provide knowledge and influence in parent's attitude to adopt the desired practice. The campaign seeks to promote individual and collective benefits both desired for health development and awareness. The communication campaign of vaccination courses has been launched by the Ministry of Health, Government of Pakistan. The content of the
campaign is intended to persuade the listener/viewers (parents) to get their children immunized against polio with the message that in case their children have not been vaccinated, greater the risk of disability amongst them. These concepts can be operationalized as;

1. By Electronic Media the researcher means Pakistan Broadcasting Corporation (PBC) and Pakistan Television (PTV).

2. By exposure to Electronic Media the researcher means exposure to Polio Immunization Campaign which gives explicit or implicit messages regarding its adoption.

3. By effects the researcher means that impact on parent at all stages i.e. Knowledge, Attitude and Practice (KAP).

4. By knowledge, the researcher means, awareness regarding the idea of polio immunization through the use of electronic media.

5. By persuasion, the researcher means the favorable or unfavorable attitude formation of the respondents (parents) towards adoption/rejection of polio immunization innovation.

6. By decision, the researcher means either to go for or against the polio immunization adoption.

7. By confirmation, the researcher means the use of Electronic Media for reinforcing decision on polio immunization.

8. By parents, the researcher means married man or women having kids.

9. By newspapers and magazines, the researcher means all type of newspapers having circulation in the province.
10. By traditional media, the researcher means announcement through loud speakers, and
drums especially in rural areas.

11. By literature and posters, the researcher means pamphlets, broachers, banners, and
other type of materials used by the change agents during NID’s and SNID’s in the
province.

12. By doctor, health visitors, and friends, the researcher means interpersonal
communication/contacts.

13. By HSE status, the researcher means a respondent (parent) with sound economic
background and at least up to Matric level education. Having any three of the
following; own house, Land/property, Vehicle, Bank Account, and a servant.
Moreover, s/he is receiving more than 10,000 rupees per month.

14. By LSE status, the researcher means a respondent (parent) with poor economic
background having less than Matric level education. Neither s/he owns any house,
land/property, nor vehicle, bank A/C and a servant and is receiving less than 10,000
rupees per month.

15. Laggards: Possess no opinion leadership ... the most localite in their outlook of any
adopter category ... suspicious of change agents and innovation.

16. Late majority: Adopts due to economic necessity and the result of increasing peer
pressure ... most uncertainty must be removed prior to adoption.

17. Early majority seldom hold positions of opinion leadership in a system ... may
deliberate for some time before adopting ... "Be not the first by which the new is tried
/ Nor the last to lay the old aside."
18. Early adopters more integrated into local social system ... respected by his or her peers ... decreases uncertainty about a new idea by adopting it.

19. Innovators are venturesomeness is almost an obsession ... interest in new ideas leads them out of local circle of peer networks and into a more cosmopolite social relationships ... often perceived as deviant from local social system and are accorded dubious status of low credibility by average members of the system.

3.9 Theoretical Statements

Statement 1: Parents in NWFP are exposed to the Electronic Media Polio Immunization Campaign.

Statement 2: By the virtue of this exposure they are aware of the existence of the innovation and gain some understanding how it functions.

Statement 3: They form a positive/negative attitude towards practicing the polio vaccination to their children.

Statement 4: The parents lead to activities, which lead to a choice or acceptance or rejection

Statement 5: Parents seek reinforcement for the innovation decision, he has made, but he may reverse his previous decision if exposed to conflicting messages about the innovation.

Statement 6: The parents interact with change agents or opinion leaders.

Statement 7: The practice of immunization increases through the adoption of Health Development innovation.

3.10 Hypotheses

H Higher the socioeconomic status of parent, the greater would be the awareness
level and practice of polio immunization of children.

Heavy the exposure to the electronic media polio immunization campaign, the higher is the effects at various stages (knowledge/awareness, persuasion, decision and confirmation) of innovation decision process.
Notes

1 As the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease. Similarly, Rogers (1976) points out that information results not only in increasing knowledge gaps, but also in gaps concerning behaviour and attitude. Accordingly, he changes the term to ‘the communication effects gap’. He also remarks that mass communication is not the only cause of the gaps. Communication directly between individuals may also have similar effects. He finally underlines the fact that the gaps need not to be caused exclusively by different levels education - other factors may also contribute to the creation of such gaps.

2 Diffusion is the process by which an innovation is communicated through certain channels overtime among the members of a social system. An innovation is an idea, practice, or object that is perceived as new. Newness in an innovation does need to just involve new knowledge. Someone may have known about innovation for some time but not yet developed a favorable or unfavorable attitude toward, it nor have adopted or rejected it. The model chosen to illustrate this approach is taken from Rogers and Shoemaker (1973) and is based on the assumption that there are at least four distinct steps in an ‘innovation-diffusion’ process: Knowledge: the individual is exposed to an awareness of the existence of the innovation and gains some understanding of how it functions. Persuasion: the individual forms a favorable or unfavorable attitude towards the innovation. Decision: the individual engages in activities which lead to a choice to adopt or reject the innovation. Confirmation: the individual seeks reinforcement for the innovation decision he or she has made, but may reverse the previous decision if exposed to conflicting messages about the innovation.

3 Researcher George Gerbner and his colleagues at the Annenberg School of Communication at the University of Pennsylvania developed the cultivation theory using what was probably the longest-running and most extensive program of research on the effects of television. Gerbner argues that television has become the central cultural arm of American society. “The Television set has become a key member of the family, the one who tells most of the stories mot of the time,” Gerbner and his associates have written (Gerbner, Gross, Morgan, & Signorielli, 1980, p.14). Gerbner points out that the average viewer watches television four hours a day. The heavy viewers watches even more. For heavy viewers, television virtually monopolizes and subsumes other sources of information, ideas, and consciousness, Gerbner says. The effects of all this exposure to the same messages produces what Gebner calls cultivation, or the teaching of a common worldview, common roles, and common values. Gerbner presents research supporting cultivation theory that is based on comparisons of heavy and light television viewers. Gerbner analyzed answers to questions posed in surveys and found that heavy and light television viewers typically give different answers. Furthermore, the heavy television viewers often give answers that are closer to the way the world is portrayed on television.

4 Term used to describe the way the media set the order of importance of current issues,
especially in the reportage of news. Closely linked with the process of Gatekeeping, agenda setting defines the context of transmission, establishes the terms of reference and the limits of debate. In Broadcasting the agenda is more assertive than in newspapers where the reader can ignore the order of priorities set by the paper’s editorial team and turn straight to the small ads. Or the sports page.

Another view that attributes wide (if not powerful) influence to the mass media is the concept of media hegemony. Media hegemony is rooted in the ideas of Marxist economics. The concept of hegemony states that the ideas of the ruling class in society become the ruling ideas.

In her paper, “The Spiral of Silence: a theory of public opinion” published in the Journal of Communication, 24 (1974), German professor of communications research Elisabeth Noelle-Neumann examines the interplay between three communicative factors: the mass media, interpersonal communication and an individual’s perception of his or her own standpoint in relation to other in society. The model is based upon the belief that people are uneasy-suffer dissonance-if they feel themselves to be isolates with regard to general opinion and attitude: that they are the odd one out. In response to a situation, we tend to ask, what do other people think; what is the majority or dominant opinion?

For details and figure of that model see (Bryant, 2002).

Ibid.

Ibid.
CHAPTER IV

Research Methodology

4.1 Research Questions

1. To what extent electronic media polio immunization campaigns influences parents belonging to higher and lower socioeconomic status at various stages of innovation-decision process in NWFP, Pakistan?

2. Whether or not the effects of electronic media polio immunization campaign are uniform on parents belonging to HSE and LSE.

Explaining the Research Question

There is no simple way of refining research questions. However, the researcher has outlined few types of questions and provides some guidelines to help focus research. Initially it is very essential to define a few terms.

A variable is a characteristic which has more than one category (or value). Thus sex is a variable with the categories male and female. Age is a variable with many different categories (one year old, two years old, etc.). Any person, however, is only be in one category. A variable then is a characteristic on which people can differ from one another. In cause and effect terms we can distinguish between dependent, independent and intervening variables. The effect is called a dependent variable (symbolized Y): it is the variable which is dependent on something else. The assumed cause is called the independent variable (symbolized X): an intervening variable (symbolized Z) is the means by which the independent variable affects the dependent variable (De Vaus, 2001 pp.27-28). So in this research work the aforementioned Research Question is explained diagrammatically as;
Exposure to electronic media ------ other media ------ polio immunization

\[ X \hspace{1cm} Z \hspace{1cm} Y \]

**Explanation: searching for causes and consequences**

Over the last few years the practice of polio immunization in HSE status has increased markedly. Thus the researcher wants to know why but have no idea. Diagrammatically then the problem is

\[ ? \hspace{1cm} \text{Increase in polio immunization innovation in HSE} \hspace{1cm} ? \]

\[ X \hspace{1cm} Y \]

Alternatively the researcher interest is in discovering the consequences of the increase rate of polio immunization in HSE. Diagrammatically this is

\[ \text{Increase in polio immunization innovation in HSE} \hspace{1cm} ? \]

\[ X \hspace{1cm} Y \]

The next step is to list possible causes or consequences and then collect relevant data.

**4.2 Research Design**

Research technique applied in this study is called Survey Research (Analytical Survey) attempt to describe and explain why certain situations exist. In this approach two or more variables are usually examined to test research hypothesis. The results allow researcher to examine the interrelationship among variables and to draw explanatory inferences (Wimmer, 1991). The methodology used in this study is descriptive (what is going on) and explanatory (why it is going on) in nature for evaluating message-oriented information related to Polio immunization innovation of Health Communication. The research method involve data gathering through closed-ended
questionnaire of multiple choices from the parents of NWFP, Pakistan. In order to
explore the Polio immunization aspect of the health sector and to seek quantitative data,
the researcher through a well trained group of students had approached the respondents
to fill the questionnaire.

4.3 Research Design Model (The Interaction of Theory and Research)

The research design illustrated in figure 4.1 as shown explains that observations
require explanation but equally explanations need to be tested against the facts. It is not
enough simply to collect facts. Nor is it sufficient simply to develop explanations
without testing them against facts. Fundamentally sociological research involves a
constant interplay between observation and explanation, collection of further facts to
test the explanation, a refinement of the explanation and so on (De Vaus, 2001 p.11).

The development of good explanations involves two related processes: theory
construction and theory testing. These two processes are not alternative ways of arriving
at good theories but represent two stages with different starting points.

The theory construction approach

Empirical level       Start here obs.1 obs.2 obs.3 obs.4
Conceptual-abstract level       Theory

The theory testing approach

Conceptual-abstract level       Start here Theory

Empirical level       obs.1 obs.2 obs.3 obs.4
Note: obs=observation

Figure 4.1 Theory constructions and testing

Theory construction is a process which begins with a set of observations (i.e. description) and moves on to develop theories of these observations. It is also called grounded theory because it is based on observations—not simply armchair speculation. Other call it post factum theory (Merton, 1968) or *ex post facto* theory since the theory comes after the observation rather than before.

Theory testing differs in that it starts with a theory. Using the theory we predict how things will be in the ‘real’ world. So the research design in this research work is based on the second stage of the figure 4.1 and the five observations (Hypothesis) have earlier been mentioned in 3.10 Chapter 3.

4.4 Universe

The universe of the study is North West Frontier Province (NWFP) of Pakistan. Populations for the study are parents (married men and women having kid/s) of the children of rural and urban parts of the province.

4.5 Target Group

This survey adopts all parents in the sample of enumeration NWFP. The target population for the adoption of Polio immunization consists of all 24 districts of NWFP. Total area of the province is 74522 Sq. Km and the population according to 1998 census is 17737591 (District Census Report, 1998, Population Census Organization Government of Pakistan, Islamabad).

4.6 Theoretical Approach to the Research

*Survey Error*
Sampling error—the possibility that the particular information drawn from the sample could be significantly different from the population.

Coverage error—not allowing all members of the survey population to have known non-zero probability of being included in the survey.

Non-response error—those who respond to survey are different from those who do not respond.

Measurement error—poor questions.

Research error—decisions made by researcher in design, analysis, and other parts of research process.

**Survey Quality**

Sample Quality—choosing a sample that contains enough units from all parts of the population (true representative).

Coverage quality—ensuring that all members of the survey population have a non-zero chance of being included.

Response quality—ensuring that the respondents do not differ from non-respondents on any factor critical to the success of research.

Measurement quality—questions that generate accurate measures.

Research quality—attention to the details of the process from designing a sample to decisions.

**4.7 Sample Techniques**

Sampling is a statistical technique used in almost every field in order to collect information and on the basis of this information; inferences about the characteristics of a population are made. The process of examining every member of such a population is
called a census. In many situations, however, the chance of investigating an entire population is remote, if not non-existent, due to time and resource constraint. The usual procedure in these instances is to select a sample from the population. A sample is a subset of the population that is taken to be representative of the entire population.

As the target population in this research work is parents in NWFP, and it is beyond the access of the researcher to study each and every unit of the universe. Therefore, all the 24 districts were sampled systematically for the study. The feedback from the respondents is quite adequate as out of 500 Questionnaire, the researcher received 468 Questionnaire for study and analysis. With in each district, data are solicited for all parents residing therein. Union Councils (UC) of a Tehsil within each district are ordered according to the size of population as per 1998 census and proportional to size sampling procedures are used to select proportional number of parents from each district.

A group of students who were trained to conduct interviews with the parents acquired date about their KAP level of polio immunization innovation. In both urban and rural substrata, interviewers have visited each selected parent from the sample frame personally to secure face-to-face interviews. For that vary purpose, the researcher has adopted a multi-stage cluster sampling with severe care to minimize the error due to sampling.

**Multistage Cluster Sampling**

This technique of obtaining a final sample really involves drawing several different samples (hence its name) and does so in such a way that the cost of final interviewing is minimized. The basic procedure is first to draw a sample of areas. Initially, large areas
are selected and then progressively smaller areas within the larger ones are sampled. Eventually end up with a sample of households and use a method of selecting individuals from the selected units randomly (De Vaus, 2001 p.67).

For proportional allocation we have a formula as \( nh = \frac{n \cdot Nh}{N} \) (Cochran, 1999 p.91).

Where \( n \) is the desired sample, \( N \) is the population size of district/UC and \( Nh \) is the number of UC.

4.8 Sample Frame

A sample of 500 is selected from the 24 districts of the NWFP as below.

Table 4.1 Number wise Tehsils and UC of Districts in NWFP, Pakistan.

<table>
<thead>
<tr>
<th>Districts</th>
<th>Total No of Tehsils</th>
<th>Total number of UC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbottabad</td>
<td>1</td>
<td>46</td>
</tr>
<tr>
<td>Bannu</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>Bata Gram</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Buner</td>
<td>1</td>
<td>07</td>
</tr>
<tr>
<td>Charsadda</td>
<td>2</td>
<td>46</td>
</tr>
<tr>
<td>Chitral</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>D.I.Khan</td>
<td>3</td>
<td>48</td>
</tr>
<tr>
<td>Dir Lower</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Dir Upper</td>
<td>6</td>
<td>31</td>
</tr>
<tr>
<td>Hangu</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>Harripur</td>
<td>2</td>
<td>44</td>
</tr>
<tr>
<td>Karak</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>Kohat</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>Kohistan</td>
<td>3</td>
<td>38</td>
</tr>
<tr>
<td>Lakki Marwat</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Malkand</td>
<td>2</td>
<td>09</td>
</tr>
</tbody>
</table>
Manschra  3  58
Mardan  2  74
Nowshera  2  47
Peshawar  1  92
Shangla  1  08
Swabi  2  56
Swat  2  65
Tank  1  16
Total-24  47  873

The sampling frame of this study categorizes physical representation of the target population. It consists of sample groups that are potential stages of the sample. A subset of the Sample Frame sample groups are selected for sampling: the used sample, representing the population from which it selected. Efforts are made to make item as clear and unambiguous as possible. The students were trained for date collection. They have been told to ensure the most populous ratio of population. They were trained to administer the survey the same way every time.

All the 24 districts were divided into three groups as A= those districts having more than 40 UC including (Abbottabad, Charsadda, D.I.Khan, Harripur, Manschra, Mardan, Nowshera, Peshawar, Swabi, and Swat), B= districts having more than 25 but less than 40 UC including (Bannu, Dir Upper, Kohistan, and Lakki Marwat), and C= districts having less than 25 UC including (Bata Gram, Buner, Chitral, Dir Lower, Hangu, Karak, Kohat, Malakand, Shangla, and Tank). So the researcher has taken six districts each from group A, B, and C. This is presented in the following table.

Table 4.2 Districts of NWFP from where the sample has drawn

<table>
<thead>
<tr>
<th>Group</th>
<th>Districts</th>
<th>UC (total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Peshawar</td>
<td>92</td>
</tr>
<tr>
<td>District</td>
<td>Population</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>A Nowshera</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>B Bannu</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>B Kohistan</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>C Hangu</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>C Tank</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

Total Number of UC in six Districts = 250

Group "A" showing those districts that have more than 40 UC. This group consists of District Peshawar and Nowshera. Group "B" are those districts having more than 25 UC. This group consists of district Bannu and Kohistan. While group "C" highlights those districts having less than 25 UC. This group consists of District Hangu and Tank.

So according to a formula $n_h = \frac{n \cdot N_h}{N}$ (Cochran, 1999 p.91).

Sample size for District Peshawar is as under:

$$\frac{92}{250} \times 500 = 184$$

Sample size for District Nowshera is:

$$\frac{47}{250} \times 500 = 94$$

Sample size for District Bannu is:

$$\frac{40}{250} \times 500 = 80$$

Sample size for District Kohistan is:

$$\frac{38}{250} \times 500 = 76$$

Sample size for District Hangu is:
Sample size for District Tank is:

\[
17 \times \frac{500}{250} = 34
\]

\[
16 \times \frac{500}{250} = 32
\]

Hence \(184 + 94 + 80 + 76 + 34 + 32 = 500\)

On the basis of the aforementioned sample size against each district, enumerators have been sent to the respective districts to collect data randomly.

4.9 Data Gathering

Thirty-two questions (as per appendix) are framed to obtain data to measure the knowledge, attitude and practice level of parents belonging to divergent socioeconomic status regarding the polio immunization innovation in NWFP. Most of the respondents were personally contacted either by the researcher himself or through the students assigned for the purpose. However, a sizeable number of respondents have sent the questionnaire through mail. In order to have a real understanding of the questions, the questionnaire is also translated in Urdu. Out of total sample frame of 500, the researcher had received 468 and hence 32 are missing cases in this research.

4.10 Pilot Study

A considerable number of parents were initially administered the questionnaire. Their responses supported the need to involve opinion leaders, health visitors, and communication experts to design a focused questionnaire.
4.11 Questionnaire Preparation

The preparation of a steady questionnaire having the potential to dig out the required data is of course one of the difficult job in this research too. It is not an exaggeration to write that more than 25 different drafts were prepared before finalizing the final questionnaire.

4.12 Pre-Testing

As has been pointed earlier that the questionnaire is piloted and refined several times. Dozens of parents were tested to gain unbiased feedback into the survey’s understandability, requirements, and of course the results.

4.13 Questionnaire Distribution and Collection

his study’s standardized questionnaire is distributed and later collected through trained M.A Students of Journalism and Mass Communication Department of Peshawar University. These students have even moved to some of the remote areas of the NWFP. The researcher himself has traveled to all areas from where the date has been gathered through the questionnaire.

4.14 Data Coding

The data gathered has initially coded in Excel program. The researcher has used Statistical Package for Social Scientists (SPSS) for analyzing the data. Besides, MS Word, Power Point, and Excel have been used for composing the script, drawing tables, charts and graphs.

4.15 Validity and Reliability

As Campbell and Fisk, 1987 defines validity as an agreement between two efforts to measure the same thing with different methods (Hammersley, 1987).
The measure that an instrument measure what it is supposed to.\textsuperscript{1} Validity is accuracy.\textsuperscript{2}

It is the degree of approximation of reality (Johnston and Pennypacker, 1980 pp.190-91).

Are we measuring what we think we are (Kerlinger, 1964 pp.430, 444-45)?

Reliability is the ability to measure consistently.\textsuperscript{3}

It is the accuracy of precision of a measuring instrument (Kerlinger, 1964 pp.430, 444-45).

\textit{Application of Validity and Reliability in this study}

The researcher has assessed the variables for whether or not the items seem to be measuring what they intend to measure (face validity). This study measure all aspects or dimensions of the concept being measured.

Similarly, methodological question of reliability has empirically addressed so as to determine the extent to which the variables are reliable or consistent measures. Measurement error is minimized by the virtue of pre-testing and revised questionnaire. Before employing the final statistical tests, the researcher has measured the date gathered before finalizing the questionnaire.

\textbf{4.16 Treatment of Data}

Every respondent is guaranteed complete confidentiality. The assurance of confidentiality is made in the questionnaire's cover letter. Furthermore, during administration of the written survey, obvious identification features required to be provided by the respondents are also omitted.

Statistical tests like chi-square are applied on the survey responses.
Notes

1 Dr. A. R. Khalid, Associate Professor, Department of Mass Communication, University of the Punjab, Lahore, Pakistan.

2 Dr. Mujahid Ali Mansoori, Associate Professor, Department of Mass Communication, University of the Punjab, Lahore, Pakistan.

3 Dr. Anwar Hassan of VC Preston University Peshawar and Kohat campus.
CHAPTER V

Data Analysis and Findings

The analysis is carried out on the lines, so that it covers the four dimension of the study, namely: Awareness/knowledge, attitude, practice and confirmation. Important information is extracted and tabular and diagrammatic approach is incorporated.

The said four dimensions of the polio immunization campaign are quantified, sources which are playing dominant role are highlighted and their associations with relevant variables like socio-economic status (SES), education, profession, age and exposure to electronic media are tested. Considering the resources, time and financial constraints a sample of size 500 is carried out according to the sampling techniques stated in the methodology. Out of the total sample size 32 questionnaires are completely not responded, while 468 cases are processed for further analysis. It is noticeable that a small amount of partial none response in separate variable analysis exist which varies from variable to variable. The analysis is carried out with the help of most commonly used statistical package namely: SPSS (Statistical Package for Social Scientists).

A. Knowledge/Awareness Quantification and Sources Identification

The researcher has quantify the awareness level of parents regarding the polio immunization campaign followed by major sources that bring awareness is highlighted. Then awareness about the polio immunization campaign is tested for possible association with SES, education level, profession, electronic media exposure and age of the parent.

5.1 Familiarity with the concept of polio immunization campaign

In order to assess the awareness in the public, familiarity with the concept of polio immunization campaign is minutely categorized into five categories. Most of the
respondents 268 (57.3%) know “to some extent” about the polio immunization campaign. Yet another 112 (23.9%) and 44 (9.4%) are familiar with the concept “to great extent” and “completely” respectively. This means a high percentage 90.6% of the population is aware of the concept of polio immunization campaign ranging from “some extent to “completely”. The respondents “did not know” or “not at all” are sliced in corresponding pie chart.

Table 5.1 Familiarity with the concept of polio immunization

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>23</td>
<td>4.9</td>
</tr>
<tr>
<td>Not at all</td>
<td>20</td>
<td>4.3</td>
</tr>
<tr>
<td>To some extent</td>
<td>268</td>
<td>57.3</td>
</tr>
<tr>
<td>To great extent</td>
<td>112</td>
<td>23.9</td>
</tr>
<tr>
<td>Completely</td>
<td>44</td>
<td>9.4</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>.2</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 5.1 Awareness about polio immunization campaign
5.2 Major Sources of information about polio immunization

Next interest naturally lies in knowing the major sources which act in enhancing awareness about polio immunization campaign in the public. The following table (1.2) listed five sources generally used in advertising polio immunization campaign. The role of the electronic media at the top of the table is quite evident, which alone is responsible for 72.4 % awareness in the public. While the role of print media, doctors/health visitors/friends and traditional media is supportive.

Table 5.2 Major sources of information for polio immunization

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic media</td>
<td>339</td>
<td>72.4</td>
<td>72.4</td>
</tr>
<tr>
<td>Print media</td>
<td>38</td>
<td>8.1</td>
<td>80.6</td>
</tr>
<tr>
<td>Traditional media</td>
<td>30</td>
<td>6.4</td>
<td>87.0</td>
</tr>
<tr>
<td>Literature/Posters</td>
<td>17</td>
<td>3.6</td>
<td>90.6</td>
</tr>
<tr>
<td>Doctors/health visitors/friends</td>
<td>39</td>
<td>8.3</td>
<td>98.9</td>
</tr>
<tr>
<td>No response</td>
<td>5</td>
<td>1.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
5.3 Exposure to Radio and TV polio immunization campaign

Among the sources of information i.e. Television, Radio, newspapers/magazines, internet, traditional media and any other, it is found that the dominant sources used for information purposes are Television and Radio. Thus, naturally, the concentration of the public for polio immunization exposure is towards electronic media. Table 5.3 reveals that the bulk of the population 56.4% is sometimes exposed to the campaign on TV and Radio. Then there are another 18.4% and 4.5% which are frequently and very frequently exposed to the polio immunization campaign of electronic media. Interestingly 20.7% are still not even exposed to Radio and TV polio immunization campaign.
Table 5.3 Exposure to Radio and TV

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't Know</td>
<td>26</td>
<td>5.6</td>
<td>5.6</td>
</tr>
<tr>
<td>Never</td>
<td>71</td>
<td>15.2</td>
<td>20.7</td>
</tr>
<tr>
<td>Sometimes</td>
<td>264</td>
<td>56.4</td>
<td>77.1</td>
</tr>
<tr>
<td>Frequently</td>
<td>86</td>
<td>18.4</td>
<td>95.5</td>
</tr>
<tr>
<td>Very frequently</td>
<td>21</td>
<td>4.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.3 Exposure to Radio and TV polio immunization campaign

Time spent on listening Radio and watching TV is noteworthy. Only 12% claims they are “not viewing or listening”. While those claims to watch TV and listen Radio for “an hour” or “two to three hours” are making a major component 71.5%. Yet, another 16.2% of the population is spending more than 4 hours daily.
Table 5.4 Time spent on Radio and TV

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not listening or viewing</td>
<td>56</td>
<td>12.0</td>
<td>12.0</td>
</tr>
<tr>
<td>Less than an hour</td>
<td>154</td>
<td>32.9</td>
<td>44.9</td>
</tr>
<tr>
<td>Two to three hours</td>
<td>181</td>
<td>38.7</td>
<td>83.5</td>
</tr>
<tr>
<td>Four to five hours</td>
<td>45</td>
<td>9.6</td>
<td>93.2</td>
</tr>
<tr>
<td>More than five hours</td>
<td>31</td>
<td>6.6</td>
<td>99.8</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

5.4 Sources evaluation in awareness

5.4.1 Television: A part from 19% of the public which does not favor the effective role played by TV in the awareness of polio immunization campaign, which almost coincide with the previous stated figure of 20.7% “not exposed” to TV and Radio immunization campaign. The rest 70.6% of the sampled population agreeing on “less effective” to “more effective” role of the TV in the polio immunization campaign.

Table 5.5 Television as a source of information for polio immunization campaign.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don't know</td>
<td>87</td>
<td>18.6</td>
<td>18.6</td>
</tr>
<tr>
<td>Not effective</td>
<td>2</td>
<td>.4</td>
<td>19.0</td>
</tr>
<tr>
<td>Less effective</td>
<td>44</td>
<td>9.4</td>
<td>28.4</td>
</tr>
<tr>
<td>Effective</td>
<td>217</td>
<td>46.4</td>
<td>74.8</td>
</tr>
<tr>
<td>Very much effective</td>
<td>116</td>
<td>24.8</td>
<td>99.6</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 5.4 Television as a source of information for polio immunization campaign.

5.4.2 Radio: With marked difference from TV, 48% believe that Radio is playing a role in awareness about polio immunization campaign while 37.2% the highest individual category "don't know"; perhaps they drop Radio as a source of information in the presence of TV.

Table 5.6 Radio as a source of information for polio immunization campaign.
Figure 5.5 Radio as a source of information for polio immunization campaign.

5.4.3 Doctors/Health visitors/Friends: A major 62.5% of the respondents are of the view that Doctors/Health visitors/Friends are playing "less effective" to "more effective" role of awareness enhancement of polio immunization campaign. Exactly 25.6% responses fall in the category of "don’t know", while 10.7% believe Doctors/Health visitors/Friends does not have effective role in the polio immunization awareness campaign.

Table 5.7 Interpersonal communication

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>120</td>
<td>25.6</td>
<td>25.6</td>
</tr>
<tr>
<td>Not effective</td>
<td>50</td>
<td>10.7</td>
<td>36.3</td>
</tr>
<tr>
<td>Less effective</td>
<td>106</td>
<td>22.6</td>
<td>59.0</td>
</tr>
<tr>
<td>Effective</td>
<td>119</td>
<td>25.4</td>
<td>84.4</td>
</tr>
<tr>
<td>Very much effective</td>
<td>68</td>
<td>14.5</td>
<td>98.9</td>
</tr>
<tr>
<td>No response</td>
<td>5</td>
<td>1.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 5.6 Interpersonal communications as a source of information for polio immunization campaign.

Apart from the above discussed dominant sources, some other sources are also used for the dissemination of information regarding polio. They are:

Newspapers: According to the survey 24.3% agree that newspapers play an “effective” to “very effective” role in providing awareness regarding polio immunization.

Traditional media: It is found that 19.2% of those surveyed believe that traditional media (announcement through loud speaker, drum beating etc.) are playing a role (less effective or very effective) in informing respondents of polio immunization campaign.

Literature and Posters: The role of literature and posters is the awareness of polio immunization campaign is acknowledge (effective or very effective) by 14.7% of the total surveyed.
Awareness Cross Tabulation

Polio awareness campaign versus education of parent

The cross tab of polio awareness campaign versus education of parent reveal significant (P value=0.000) association between these two variables. It is found that unawareness about polio immunization campaign generally decrease with increasing level of education, while the last two categories reflecting the awareness generally increase with the increasing level of education.

Table 5.8 Polio awareness campaign versus education of parent.

<table>
<thead>
<tr>
<th>Awareness about Polio Campaign</th>
<th>No formal Education</th>
<th>Primary -Middle</th>
<th>Matric-Intermediate</th>
<th>Graduation &amp; Above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Not at all</td>
<td>12</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>To some extent</td>
<td>65</td>
<td>48</td>
<td>94</td>
<td>60</td>
</tr>
<tr>
<td>To great extent</td>
<td>7</td>
<td>12</td>
<td>42</td>
<td>95</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>129.497</td>
<td>20</td>
<td>.000</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>468</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Polio awareness campaign versus age of parent

It is found that awareness about the polio immunization campaign and age of the parent are highly associated (P value=0.000) with one another. The exact direction of the relationship can’t be extracted, however what we can say that the awareness does changes significantly with age of the parent.
Table 5.9 Polio awareness versus age of parent

<table>
<thead>
<tr>
<th>Polio campaign</th>
<th>Under 20 Years</th>
<th>21-35 years</th>
<th>36-50 years</th>
<th>51-65 years</th>
<th>More than 65 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>3</td>
<td>5</td>
<td>12</td>
<td>4</td>
<td>5</td>
<td>24</td>
</tr>
<tr>
<td>Not at all</td>
<td>5</td>
<td>5</td>
<td>8</td>
<td>2</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>To some extent</td>
<td>19</td>
<td>111</td>
<td>104</td>
<td>28</td>
<td>6</td>
<td>268</td>
</tr>
<tr>
<td>To great extent</td>
<td>2</td>
<td>35</td>
<td>52</td>
<td>21</td>
<td>2</td>
<td>112</td>
</tr>
<tr>
<td>Completely</td>
<td>3</td>
<td>15</td>
<td>16</td>
<td>9</td>
<td>1</td>
<td>44</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>171</td>
<td>192</td>
<td>64</td>
<td>14</td>
<td>468</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>55.334a</td>
<td>20</td>
<td>.000</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>38.280</td>
<td>20</td>
<td>.008</td>
</tr>
<tr>
<td>Linear-by-Linear</td>
<td>.536</td>
<td>1</td>
<td>.464</td>
</tr>
<tr>
<td>Association</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>468</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. 14 cells (46.7%) have expected count less than 5. The minimum expected count is .03.

Polio awareness campaign versus socio-economic status of the parent

The Pearson chi-square test of the corresponding cross tab reveal highly significant relationship (P value=0.000) between awareness of polio campaign and socio-economic status of the parent. The cross tab shows a marked difference in the last two categories of awareness in the two different socio-economic status, which states that high socio-economic background bring more awareness in the families.
Table 5.10 Polio awareness versus socio-economic status

<table>
<thead>
<tr>
<th>Count</th>
<th>Low socioeconomic status</th>
<th>High economic status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLIO CAM</td>
<td>Don't know</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Not at all</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To some extent</td>
<td>204</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>To great extent</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Completely</td>
<td>7</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>308</td>
<td>160</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>89.207</td>
<td>4</td>
<td>.000</td>
</tr>
</tbody>
</table>

*Awareness about the polio immunization campaign and profession of parent*

From this study it is observed that higher grade government, semi-government, private official awareness about the polio immunization campaign is significantly higher than the unemployed or labor/daily wages worker and other low income class. From the cross tabulation it can be seen that in the columns of Grade 1-16 and Grade 17 and above, the last three categories (relating awareness) constitute the bulk of the frequency.
Table 5.11 Polio awareness campaign versus profession of parent

<table>
<thead>
<tr>
<th>Polio campaign</th>
<th>Unemployed</th>
<th>Labor/farmer/shopkeeper/daily wages workers/driver</th>
<th>Grade 1-16 govt.,semi-govt.,private official</th>
<th>Grade 17 and above govt.,semi-govt.,private official</th>
<th>Any other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>3</td>
<td>11</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>Not at all</td>
<td>7</td>
<td>9</td>
<td>2</td>
<td>30</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>To some extent</td>
<td>50</td>
<td>71</td>
<td>77</td>
<td>34</td>
<td>40</td>
<td>268</td>
</tr>
<tr>
<td>To great extent</td>
<td>13</td>
<td>9</td>
<td>32</td>
<td>24</td>
<td>14</td>
<td>44</td>
</tr>
<tr>
<td>Completely</td>
<td>13</td>
<td>1</td>
<td>4</td>
<td>25</td>
<td>14</td>
<td>44</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>101</td>
<td>122</td>
<td>90</td>
<td>82</td>
<td>468</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>118.419</td>
<td>16</td>
<td>.000</td>
</tr>
</tbody>
</table>

Awareness and exposure to electronic media

Cross tab of awareness about polio immunization campaign and exposure to electronic media indicate the awareness level in higher in those persons which are exposed to electronic media that might be sometimes, frequently or very frequently. This shows significant relationship (P value= 0.000) between exposure to electronic media and awareness about polio campaign.
Table 5.12 Awareness versus exposure to electronic media polio campaign

<table>
<thead>
<tr>
<th>Polio immunization Awareness</th>
<th>Exposure to electronic media campaign</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Don't Know</td>
<td>Never</td>
</tr>
<tr>
<td>Don't know</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Not at all</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>To some extent</td>
<td>14</td>
<td>45</td>
</tr>
<tr>
<td>To great extent</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Completely</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>71</td>
</tr>
</tbody>
</table>

B. Attitude Evaluation

In the persuasion stage, the attitude of the public is quantified. The role of the TV, Radio, newspapers/magazines, traditional media, literature/posters, and doctors/health visitors/friends towards attitude formation for polio immunization campaign is assessed. For diagrammatic representation Pareto charts are used. Attitude change of the respondents is tested for possible association with socio-economic status, parent education, profession and age.

5.5 Understanding of the polio immunization campaign messages

Most of the respondents 239 cases 51.1% claim they understand the messages of polio immunization campaign to “some extent”. Then there are another 117 cases 25% and 56 cases 12% claim they understand the polio immunization messages “to great extent” and “completely” respectively.

Apart from 11.3% that “don’t know” or “not at all”, the rest of 88.1% have understanding of the messages ranging from “to some extent” to “completely”. Pareto chart (Figure 5.7) gives a good view of declining frequencies. The rising line indicates the cumulative frequency display which reveals that apart from first category, the rest of
the categories showing smooth additive effect on the line.

Table 5.13 Understanding messages of polio immunization campaign by the respondents.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
<td>35</td>
<td>8.1</td>
<td>8.1</td>
</tr>
<tr>
<td>Not at all</td>
<td>15</td>
<td>3.2</td>
<td>11.3</td>
</tr>
<tr>
<td>To some extent</td>
<td>239</td>
<td>51.1</td>
<td>62.4</td>
</tr>
<tr>
<td>To great extent</td>
<td>117</td>
<td>25.0</td>
<td>87.4</td>
</tr>
<tr>
<td>Completely</td>
<td>56</td>
<td>12.0</td>
<td>99.4</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.7 Understanding messages of polio immunization campaign by the respondents.

5.6 Attitude towards Polio Immunization Campaign

A great majority 240 persons 51.3% sense the usefulness of polio immunization campaign. Another 37.4% of the respondent trusted doctors and people for the usefulness of the polio immunization campaign of children.
Only 26 persons 5.6% see no usefulness of the polio immunization campaign, while another 24 persons 5.1% “don’t know” about the usefulness of the campaign. The corresponding Pareto chart (Figure 5.8) reflects the situation i.e. the last three categories contributing very little to the cumulative frequency line.

Table 5.14 Usefulness of immunization.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>24</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>No</td>
<td>26</td>
<td>5.6</td>
<td>10.7</td>
</tr>
<tr>
<td>People say it is useful</td>
<td>78</td>
<td>16.7</td>
<td>27.4</td>
</tr>
<tr>
<td>Doctors say it useful</td>
<td>97</td>
<td>20.7</td>
<td>48.1</td>
</tr>
<tr>
<td>Yes</td>
<td>240</td>
<td>51.3</td>
<td>99.4</td>
</tr>
<tr>
<td>No response</td>
<td>3</td>
<td>.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.8 Pareto chart indicating the relative importance usefulness of polio immunization.

5.7 Attitudinal assessment of different sources
After knowing the attitude of the public the next interest would be to assess the attitude of different sources and its involvement in the polio immunization campaign. Various sources are interacting for this purpose; however, the researcher is interested to study the prominent sources one by one.

5.7.1 Role of TV in forming favorable attitude towards polio immunization

innovation: It is crystal clear that Television is playing a vital role in media campaign. The same is evident from our survey as 79.1% respondents agree that TV has stressed them to adopt positive attitude for polio immunization of their children. In the survey these responses are ranging from “to some extent” to “completely” favorable attitude.

Out of those surveyed 82 person 17.5% are not aware of the TV role in attitude formation while 15 person 3.2% did not see the role of TV in attitude formation for polio immunization innovation.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
<td>82</td>
<td>17.5</td>
<td>17.5</td>
</tr>
<tr>
<td>Not at all</td>
<td>15</td>
<td>3.2</td>
<td>20.7</td>
</tr>
<tr>
<td>To some extent</td>
<td>73</td>
<td>15.6</td>
<td>36.3</td>
</tr>
<tr>
<td>To great extent</td>
<td>215</td>
<td>45.9</td>
<td>82.3</td>
</tr>
<tr>
<td>Completely</td>
<td>82</td>
<td>17.5</td>
<td>99.8</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 5.9 Role of TV in attitude formation for polio immunization of children.

5.7.2 Role of doctors/health visitors/friends in forming favorable attitude for polio immunization practice: The attitude of the doctors/health visitors/friends is favoring the polio immunization campaign. This is evident from the survey also. Findings suggest that 63.1\% see the positive attitude of the Doctors/Health visitors/Friends in the polio immunization campaign. Their responses are ranging from “some extent” to “completely” favorable attitude. Only 11.8\% did not agree with the said majority, while 23.5\% express their unawareness. Graphic display makes the situation very clear. The continuous rising trend of cumulative frequency line reflect that each category is contributing significantly except from a small amount 8 person 1.7\% none response.
Table 5.16 Role of interpersonal communication

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
<td>110</td>
<td>23.5</td>
<td>23.5</td>
</tr>
<tr>
<td>Not at all</td>
<td>55</td>
<td>11.8</td>
<td>35.3</td>
</tr>
<tr>
<td>To some extent</td>
<td>158</td>
<td>33.8</td>
<td>69.0</td>
</tr>
<tr>
<td>To great extent</td>
<td>82</td>
<td>17.5</td>
<td>86.5</td>
</tr>
<tr>
<td>Completely</td>
<td>55</td>
<td>11.8</td>
<td>98.3</td>
</tr>
<tr>
<td>No response</td>
<td>8</td>
<td>1.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.10 Role of interpersonal communication in attitude formation for polio immunization of children.

5.7.3 Role of newspapers/magazines in forming favorable attitude: The role of print media in forming favorable attitude is acknowledged by 47.4% of the respondents which is considered as reasonably high. However, 167 persons 35.7% show their unawareness “don’t know” about the said role of print media. There are further 10 persons 2.1% who did not respond to this particular question.

The relevant Pareto chart shows that except the last two categories, the cumulative line climb steadily, indicating their significance contribution.
Table 5.17 Newspapers/magazines role

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>167</td>
<td>35.7</td>
<td>35.7</td>
</tr>
<tr>
<td>Not at all</td>
<td>69</td>
<td>14.7</td>
<td>50.4</td>
</tr>
<tr>
<td>To some extent</td>
<td>153</td>
<td>32.7</td>
<td>83.1</td>
</tr>
<tr>
<td>To great extent</td>
<td>61</td>
<td>13.0</td>
<td>96.2</td>
</tr>
<tr>
<td>Completely</td>
<td>8</td>
<td>1.7</td>
<td>97.9</td>
</tr>
<tr>
<td>No response</td>
<td>10</td>
<td>2.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.11 Newspapers/magazines role in attitude formation for polio immunization of children.

5.7.4 Role of Radio in forming favorable attitude towards polio immunization

*innovation:* Radio as a major source of information is descending considerably over the years. This fact can be judged from our findings, which reveals that 45 % of the surveyed people favor the phenomena that of course Radio is forming favorable attitude towards polio immunization innovation. The study revealed that 163 respondents 34.8 % said Radio’s role in positive attitude formation for polio immunization is favorable up to
“some extent”. Again a very high percentage 35.7% respond that they “don’t know” about the said role. Cumulative frequency line shows a steady rise and straightened in the last two categories.

Table 5.18 Radio’s role in attitude formation for polio immunization of children.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
<td>167</td>
<td>35.7</td>
</tr>
<tr>
<td>Not at all</td>
<td>83</td>
<td>17.7</td>
</tr>
<tr>
<td>To some extent</td>
<td>163</td>
<td>34.8</td>
</tr>
<tr>
<td>To great extent</td>
<td>40</td>
<td>8.5</td>
</tr>
<tr>
<td>Completely</td>
<td>8</td>
<td>1.7</td>
</tr>
<tr>
<td>No response</td>
<td>7</td>
<td>1.5</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 5.12 Radio’s role in attitude formation for polio immunization of children.

5.7.5 Role of literature/posters in forming favorable attitude towards polio immunization innovation: It seems to be restricted mainly in urban areas. This reflection is evident from the survey, where 34.3% of the respondents recognize the idea. A vast majority 198 person 42.3% are unaware about the role of Literature/Posters in attitude
formation. Comparatively high 13 person 2.8 % as non response is found in response to this question.

Table 5.19 Role of literature/posters in attitude formation for polio immunization of children.

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
<td>198</td>
<td>42.3</td>
<td>42.3</td>
</tr>
<tr>
<td>Not at all</td>
<td>97</td>
<td>20.7</td>
<td>63.0</td>
</tr>
<tr>
<td>To some extent</td>
<td>122</td>
<td>26.1</td>
<td>89.1</td>
</tr>
<tr>
<td>To great extent</td>
<td>27</td>
<td>5.6</td>
<td>94.9</td>
</tr>
<tr>
<td>Completely</td>
<td>11</td>
<td>2.4</td>
<td>97.2</td>
</tr>
<tr>
<td>No response</td>
<td>13</td>
<td>2.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

5.7.6 Role of traditional media in forming favorable attitude towards polio immunization innovation: In some parts of the province traditional media (Loud Speakers etc.) has definite role in forming favorable attitude towards polio immunization innovation. The same is also evident in this study 33.1 %. Again highest single category 39.3 % respondents fall in “Don’t know”. Another 25.9 % viewed that traditional media does not play favorable role in attitude formation towards polio immunization innovation. Cumulative frequency line almost straightened in the last two categories.

Table 5.20 Role of traditional media

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
<td>184</td>
<td>39.3</td>
<td>39.3</td>
</tr>
<tr>
<td>Not at all</td>
<td>121</td>
<td>25.9</td>
<td>65.2</td>
</tr>
<tr>
<td>To some extent</td>
<td>98</td>
<td>20.9</td>
<td>86.1</td>
</tr>
<tr>
<td>To great extent</td>
<td>36</td>
<td>7.7</td>
<td>93.8</td>
</tr>
<tr>
<td>Perfect</td>
<td>21</td>
<td>4.5</td>
<td>98.3</td>
</tr>
<tr>
<td>No response</td>
<td>8</td>
<td>1.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 5.13 Role of traditional media in forming attitude for polio immunization
innovation.

*Attitudes Cross Tabulation*

*Socio-economic status versus immunization usefulness*

In both low and high socio-economic status, attitude positively rises as we move
down the lines, however the number say "Yes" (125) is markedly different that (115) in
the low socio-economic status. Thus it is concluded that highly significant (chi-square P
value=0.000) relationship exist between socio-economic status and the attitude of the
parents to polio immunization campaign.
Table 5.21 immunization usefulness versus SES

<table>
<thead>
<tr>
<th>Count</th>
<th>STATUS</th>
<th>Low socioeconomic status</th>
<th>High economic status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunization</td>
<td>Don't know</td>
<td>24</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>20</td>
<td>6</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>People say it is useful</td>
<td>71</td>
<td>7</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Doctors say it useful</td>
<td>78</td>
<td>19</td>
<td>97</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>115</td>
<td>125</td>
<td>240</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>308</td>
<td>160</td>
<td>468</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>73.206</td>
<td>4</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Polio Immunization usefulness versus profession of parent**

Responses of the polio immunization usefulness when observed against profession of parent, the frequency pattern shows rising positive attitude change from lower to the higher grade employees. The corresponding result from the Pearson Chi-square indicate highly significant (P value=0.000) relationship between attitude of the family and profession of the parent.
Table 5.22 Polio immunization usefulness versus profession of parents

<table>
<thead>
<tr>
<th>Immunisation useful</th>
<th>Unemployed</th>
<th>Labor/farmer/shopkeeper/daily wages workers/driver</th>
<th>Grade 1-16 govt., semi-govt., private official</th>
<th>Grade 17 and above govt., semi-govt., privat e official</th>
<th>Any other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
<td>11</td>
<td>11</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>27</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>26</td>
</tr>
<tr>
<td>People say it is useful</td>
<td>21</td>
<td>31</td>
<td>12</td>
<td>3</td>
<td>11</td>
<td>78</td>
</tr>
<tr>
<td>Doctors say it useful</td>
<td>21</td>
<td>21</td>
<td>31</td>
<td>12</td>
<td>12</td>
<td>97</td>
</tr>
<tr>
<td>Yes</td>
<td>13</td>
<td>31</td>
<td>74</td>
<td>69</td>
<td>53</td>
<td>240</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>101</td>
<td>122</td>
<td>90</td>
<td>82</td>
<td>468</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>108.721</td>
<td>16</td>
<td>.000</td>
</tr>
</tbody>
</table>

Polio Immunization usefulness versus age of the parent

It will of interest to know how the attitude of the parent changes due to age, particularly with reference to polio immunization campaign. The corresponding cross tabulation does not reveal straight forward linear (increasing or decreasing) relationship between these two factors. It seems say upto age 65 years positive attitude is rising and beyond that it goes the other way. However, the test statistic request indicates significant relation of attitude with age of the parent.
Table 5.23 Immunization usefulness versus age of parents

<table>
<thead>
<tr>
<th>Immunization useful</th>
<th>Under 20 years</th>
<th>21-35 years</th>
<th>36-50 years</th>
<th>51-65 years</th>
<th>More than 65 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>6</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>27</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>8</td>
<td>13</td>
<td>5</td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>People say it is useful</td>
<td>9</td>
<td>22</td>
<td>35</td>
<td>6</td>
<td>6</td>
<td>78</td>
</tr>
<tr>
<td>Doctors say it useful</td>
<td>7</td>
<td>42</td>
<td>40</td>
<td>7</td>
<td>1</td>
<td>97</td>
</tr>
<tr>
<td>Yes</td>
<td>5</td>
<td>89</td>
<td>99</td>
<td>43</td>
<td>4</td>
<td>240</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>171</td>
<td>192</td>
<td>64</td>
<td>14</td>
<td>468</td>
</tr>
</tbody>
</table>

### Chi-Square Tests

<table>
<thead>
<tr>
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<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>55.775</td>
<td>16</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Immunization usefulness versus exposure to electronic media**

The cross tab relevant to exposure to electronic media and responses of the people about the usefulness of immunization shows that the positive responses rises significantly as the exposure to the electronic media increases. The same is reflected by the result of the Pearson chi-square test statistic gives P value 0.000, which leads to the rejection of the hypothesis of independence and accepting the hypothesis of significant relationship between exposure to electronic media and responses regarding polio immunization usefulness.
Table 5.24 Immunization usefulness Vs exposure to electronic media campaign

<table>
<thead>
<tr>
<th>Immunization useful</th>
<th>Exposure to electronic media campaign</th>
<th>Don't Know</th>
<th>Never</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Very Frequently</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td></td>
<td>2</td>
<td>4</td>
<td>17</td>
<td>3</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>2</td>
<td>12</td>
<td>8</td>
<td>4</td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>People say it is useful</td>
<td></td>
<td>6</td>
<td>17</td>
<td>46</td>
<td>7</td>
<td>2</td>
<td>75</td>
</tr>
<tr>
<td>Doctors say it useful</td>
<td></td>
<td>8</td>
<td>13</td>
<td>51</td>
<td>23</td>
<td>2</td>
<td>97</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>8</td>
<td>25</td>
<td>142</td>
<td>49</td>
<td>16</td>
<td>240</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>26</td>
<td>71</td>
<td>264</td>
<td>86</td>
<td>21</td>
<td>408</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>43.167</td>
<td>16</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Immunization usefulness versus education of parent**

The relevant cross tab gives a clear view; the “Yes” responses in the last two columns are significantly higher as compared to those in the first two columns. The Pearson chi-square test indicated highly significant (p-value=0.000) relation between attitude and education of parent.

Table 5.25 Education of parent Vs Immunization usefulness

<table>
<thead>
<tr>
<th>Immunization useful</th>
<th>Education</th>
<th>No formal Education</th>
<th>Primary-Middle</th>
<th>Matric-Intermediate</th>
<th>Graduation &amp; Above</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td></td>
<td>12</td>
<td>9</td>
<td>4</td>
<td>2</td>
<td>27</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>8</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>People say it is useful</td>
<td></td>
<td>32</td>
<td>13</td>
<td>20</td>
<td>13</td>
<td>78</td>
</tr>
<tr>
<td>Doctors say it useful</td>
<td></td>
<td>20</td>
<td>14</td>
<td>36</td>
<td>27</td>
<td>97</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td>19</td>
<td>31</td>
<td>78</td>
<td>112</td>
<td>240</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>91</td>
<td>72</td>
<td>146</td>
<td>159</td>
<td>468</td>
</tr>
</tbody>
</table>
Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>83.463</td>
<td>12</td>
<td>.000</td>
</tr>
</tbody>
</table>

C. Evaluation of Polio Immunization Practices

So far the concentration is on knowledge and attitude of polio immunization campaign. Now investigation of the important stage of the KAP program, Practice/implementation is carried out. Here main reasons of adopting polio immunization are listed. Those did not vaccinated their children (49 families 10.5 %) are separately studied and main reasons of not immunizing their children are listed. Categorization of the groups of potential adopters for polio immunization is made. Interest may lie in knowing whether immunization status (child vaccinated or not) has any significance association with the parent socio-economic status, education, age and profession.

5.8 Immunization status of children in NWFP

One of the most important finding of the survey is the proportion of children immunized. It is to be noted that yet 100 % immunization has not been attained. The percentage is 85.9 % (402 families) for fully immunized children. The percentage of the families which did not immunize their children is 10.5 % (49 cases). There is a small percentage of 2.6 % which opted for the partial immunization of their children.

The relevant Pareto chart giving a peculiar look. The cumulative frequency line after a single jump straightened up, reflecting the minimal effect of the rest of the bars.
Table 5.26 Immunization status of children in NWFP

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>49</td>
<td>10.5</td>
<td>10.5</td>
</tr>
<tr>
<td>Immunized only male</td>
<td>4</td>
<td>.9</td>
<td>11.3</td>
</tr>
<tr>
<td>child</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunized only female</td>
<td>1</td>
<td>.2</td>
<td>11.5</td>
</tr>
<tr>
<td>child</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partially immunized</td>
<td>12</td>
<td>2.6</td>
<td>14.1</td>
</tr>
<tr>
<td>Immunized all children</td>
<td>402</td>
<td>85.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Pareto chart indicating immunization status of the sampled children

Figure 5.14 Immunization statuses of children in NWFP

5.9 Major sources of knowledge and attitude change

The main source forcing the parent to practice polio immunization innovation is electronic media as 61.1% respondent mark this option. Out of the total surveyed 14.78 % replied that they got the said information from Doctors/Health visitors/Friends. While 5.6 % and 5.1 % are those responded in favor of print media and traditional media respectively. It is to be noted that 49 families (10.5 %) did not opted for the polio vaccination and hence considered as not applicable cases.
The corresponding cumulative frequency line indicating a slow but steady rising trend.

Table 5.27 Sources of obtaining knowledge

<table>
<thead>
<tr>
<th>Source of Knowledge</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Not applicable</td>
<td>49</td>
<td>10.5</td>
<td>10.5</td>
</tr>
<tr>
<td>2. Electronic media</td>
<td>286</td>
<td>61.1</td>
<td>71.6</td>
</tr>
<tr>
<td>3. Print media</td>
<td>26</td>
<td>5.6</td>
<td>77.1</td>
</tr>
<tr>
<td>4. Traditional media</td>
<td>24</td>
<td>5.1</td>
<td>82.3</td>
</tr>
<tr>
<td>5. Literature/Posters</td>
<td>10</td>
<td>2.1</td>
<td>84.4</td>
</tr>
<tr>
<td>6. Doctors/Health visitors/Friends</td>
<td>69</td>
<td>14.7</td>
<td>99.1</td>
</tr>
<tr>
<td>7. No response</td>
<td>4</td>
<td>.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Chart indicating how the knowledge of polio immunization innovation is obtained.

Figure 5.15 Order of important sources for polio immunization

5.10 **Main reasons for adopting polio vaccination**

Main reasons behind vaccinating children are listed in Table 5.28 Almost half
49.6% of the respondents believe that vaccination is effective in eradicating polio. Another 46 families 9.8% are influenced by high publicity and motivation behind the campaign, 7.9% immunize their children from the fear of isolation from the society. A reasonable amount 21.4% termed as polio immunization economically viable.

Paracto chart shows there is no doubt in the effectiveness of the vaccination, however, the other listed reasons are contributing to the cumulative line.

Table 5.28 Main reasons of adopting polio immunization of children in NWFP

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>49</td>
<td>10.5</td>
<td>10.5</td>
</tr>
<tr>
<td>Economically viable</td>
<td>100</td>
<td>21.4</td>
<td>31.8</td>
</tr>
<tr>
<td>Effective in eradicating polio</td>
<td>232</td>
<td>49.6</td>
<td>81.4</td>
</tr>
<tr>
<td>Highly publicized and motivated campaign</td>
<td>46</td>
<td>9.8</td>
<td>91.2</td>
</tr>
<tr>
<td>From the fear of isolation</td>
<td>37</td>
<td>7.9</td>
<td>99.1</td>
</tr>
<tr>
<td>Any other</td>
<td>3</td>
<td>.6</td>
<td>99.8</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.16 Main reasons of adopting polio immunization of children in NWFP
5.11 *Main reasons for not immunizing children*

It will be highly valuable to know the reason behind not going for vaccination. The reason given by 49 families 10.5% of the samples are listed in the following (table 3.4). Lack of knowledge is considered as the major reason (14 families), than 13 respondents viewed that vaccination affects fertility of the child i.e. it is not safe. Further, 12 families does not consider it important. Apart from those stated religion/social barrier and other cause are also contributing to the reasons of not vaccinating children.

Table 2.29 Main reasons for not immunizing children in NWFP

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of knowledge</td>
<td>14</td>
</tr>
<tr>
<td>It affects fertility/not safe</td>
<td>13</td>
</tr>
<tr>
<td>It is not so important</td>
<td>12</td>
</tr>
<tr>
<td>Religious/social barriers</td>
<td>5</td>
</tr>
<tr>
<td>Any other</td>
<td>5</td>
</tr>
</tbody>
</table>

Reasons for not immunizing children in NWFP

*Not vaccinated due to the reason*
- Lack of knowledge
- It affects fertility/not safe
- It is not so important
- Religious/social barriers
- Any other
5.12 Groups of potential adopters for polio immunization innovations

The analysis confirmed the potential existence of five different groups, as far as polio immunization is concerned. At the top of the table 3.5 is the laggards group 12.4%. The late majority and early majority constitute 21.2% and 31.2% respectively. The latter two groups of early adopters and innovators constitute 22% and 12% of the total sample (468 respondents).

The Pareto chart simplifies the situation, indicating all the five groups based on significant participation. The cumulative frequency line rise steadily with reasonable slope until a small amount 0.4% none response flattened it.

Table 5.30 Groups of potential adopters of polio

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laggards</td>
<td>58</td>
<td>12.4</td>
<td>12.4</td>
</tr>
<tr>
<td>Late majority</td>
<td>99</td>
<td>21.2</td>
<td>33.5</td>
</tr>
<tr>
<td>Early majority</td>
<td>146</td>
<td>31.2</td>
<td>64.7</td>
</tr>
<tr>
<td>Early adopters</td>
<td>103</td>
<td>22.0</td>
<td>86.8</td>
</tr>
<tr>
<td>Innovators</td>
<td>60</td>
<td>12.6</td>
<td>99.6</td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 5.18 Groups of potential adopters of polio immunization

*Practice cross Tabulation*

*Socio-economic status versus immunization status*

As is evident from this study that most of the not immunized children (44) belong to LSE and partially immunized children (15) mostly belong to LSE status. Two of the categories they are only male child immunized and only female child immunized contain very small frequency and are included in the partially immunized category for analysis purposes. The relevant Pearson chi-square test indicates significant relationship between socio-economic status and immunization status.
Table 5.31 Immunization status versus SES cross tabulation

<table>
<thead>
<tr>
<th>Immunization Status</th>
<th>STATUS</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low socioeconmic status</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>44</td>
</tr>
<tr>
<td>Partially immunized</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Immunized all children</td>
<td></td>
<td>249</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>308</td>
</tr>
<tr>
<td></td>
<td>High economic status</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
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<td></td>
<td></td>
<td>153</td>
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<td></td>
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<td></td>
<td></td>
<td>49</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>402</td>
</tr>
<tr>
<td></td>
<td></td>
<td>468</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th>Pearson Chi-Square</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19.005</td>
<td>2</td>
<td>.000</td>
</tr>
</tbody>
</table>

Polio Immunization status versus profession of parent

Polio vaccination of the children increase markedly from lower to higher grade employees. Not vaccinated children are found mostly in the labor/farmer/shopkeeper group and in the unemployed parent group.

The relevant Pearson chi-square indicate significant relationship between polio immunization status and profession of the parent (p value=0.000).
Table 5.32 Immunization status versus profession of parents

<table>
<thead>
<tr>
<th>Immunization Status</th>
<th>Unemployed</th>
<th>Labor/farmer/shopkeeper/daily wages workers/driver</th>
<th>Grade 1-16 govt., semi-govt., private official</th>
<th>Grade 17 and above govt., semi-govt., priv. official</th>
<th>Any other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>13</td>
<td>18</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>49</td>
</tr>
<tr>
<td>Partially immunized</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>Immunized all children</td>
<td>58</td>
<td>77</td>
<td>112</td>
<td>85</td>
<td>70</td>
<td>402</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>101</td>
<td>122</td>
<td>90</td>
<td>82</td>
<td>488</td>
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</table>

Chi-Square Tests

<table>
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</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>21.848</td>
<td>8</td>
<td>.005</td>
</tr>
</tbody>
</table>

Immunization status versus age of the parent

The study reveals that age of the parent and immunization status of their children does not possess any significant relationship i.e. they are independent. The corresponding chi-square test gives significance of 0.306.

Table 5.33 Immunization status and age of parent cross tabulation

<table>
<thead>
<tr>
<th>Immunization Status</th>
<th>Under 20 years</th>
<th>21-35 years</th>
<th>36-50 years</th>
<th>51-65 years</th>
<th>More than 65 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>3</td>
<td>16</td>
<td>17</td>
<td>9</td>
<td>4</td>
<td>49</td>
</tr>
<tr>
<td>Partially immunized</td>
<td>5</td>
<td>10</td>
<td>2</td>
<td>53</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>Immunized all children</td>
<td>24</td>
<td>150</td>
<td>165</td>
<td>53</td>
<td>10</td>
<td>402</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>171</td>
<td>192</td>
<td>64</td>
<td>14</td>
<td>488</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>9.452</td>
<td>8</td>
<td>.306</td>
</tr>
</tbody>
</table>
**Immunization status versus education of parent**

From the cross tab showing immunization status against education of parent it is observed that the rate of immunizing children increases as the education of parent increases. Pearson chi-square test shows significant relationship (P value=0.000) between immunization status and education of parent.

Table 5.34 Immunization status versus education of parent

<table>
<thead>
<tr>
<th>Immunization Status</th>
<th>No formal education</th>
<th>Primary-Middle</th>
<th>Matric-Intermediate</th>
<th>Graduation &amp; above</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>21</td>
<td>9</td>
<td>13</td>
<td>6</td>
<td>49</td>
</tr>
<tr>
<td>Partially immunized</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Immunized all children</td>
<td>67</td>
<td>60</td>
<td>124</td>
<td>151</td>
<td>402</td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
<td>72</td>
<td>146</td>
<td>159</td>
<td>468</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>29.568</td>
<td>6</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Immunization status versus exposure of the parent to electronic media**

It is found that the polio immunization rate increases rapidly as more and more people are exposed to the electronic media. The corresponding Pearson chi-square is highly significant (P value=0.000) reflecting strong relation of practice of polio immunization and exposure to electronic media.
Table 5.35 Exposure to electronic media versus immunization status

<table>
<thead>
<tr>
<th>Immunization Status</th>
<th>Don't Know</th>
<th>Never</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Very frequently</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>4</td>
<td>19</td>
<td>20</td>
<td>6</td>
<td></td>
<td>49</td>
</tr>
<tr>
<td>Partially immunized</td>
<td>1</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Immunized all children</td>
<td>21</td>
<td>49</td>
<td>234</td>
<td>77</td>
<td>21</td>
<td>402</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>71</td>
<td>264</td>
<td>86</td>
<td>21</td>
<td>468</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>28.051</td>
<td>8</td>
<td>.000</td>
</tr>
</tbody>
</table>

D. Confirmation Stage

The last stage of the four dimensional study is the decision confirmation stage. Here the researcher intend to assess the degree of satisfaction in both the cases (either immunize or not immunize child). Moreover, it is also on card to dig out the dominant source the parent used for the reinforcement of their decision.

5.13 Degree of satisfaction on decision of immunizing children against polio

Satisfaction level about the polio immunization innovation decision (adoption/rejection) made by the parents is categorized at five levels. Exactly 50 % respondents are satisfied with their decision. Further 30.1 % are completely satisfied, which means 80 % are reasonable satisfied or completely satisfied with their decision.

It is interesting to note that 19.7 % of those surveyed are not satisfied with their decision.

The respective Pareto chart indicates the relative importance of the first three categories. The cumulative line is curving and then straightening at the end.
Table 5.35 Exposure to electronic media versus immunization status

<table>
<thead>
<tr>
<th>Immunization Status</th>
<th>Exposure to electronic media</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Don't Know</td>
<td>Never</td>
<td>Sometimes</td>
<td>Frequently</td>
<td>Very frequently</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>19</td>
<td>20</td>
<td>6</td>
<td></td>
<td>49</td>
</tr>
<tr>
<td>Partially immunized</td>
<td>1</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Immunized all children</td>
<td>21</td>
<td>49</td>
<td>234</td>
<td>77</td>
<td>21</td>
<td>402</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>71</td>
<td>264</td>
<td>86</td>
<td>21</td>
<td>468</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>28.051</td>
<td>8</td>
<td>.000</td>
</tr>
</tbody>
</table>

D. Confirmation Stage

The last stage of the four dimensional study is the decision confirmation stage. Here the researcher intend to assess the degree of satisfaction in both the cases (either immunize or not immunize child). Moreover, it is also on card to dig out the dominant source the parent used for the reinforcement of their decision.

5.13 Degree of satisfaction on decision of immunizing children against polio

Satisfaction level about the polio immunization innovation decision (adoption/rejection) made by the parents is categorized at five levels. Exactly 50 % respondents are satisfied with their decision. Further 30.1 % are completely satisfied, which means 80 % are reasonable satisfied or completely satisfied with their decision.

It is interesting to note that 19.7 % of those surveyed are not satisfied with their decision.

The respective Pareto chart indicates the relative importance of the first three categories. The cumulative line is curving and then straightening at the end.
Table 5.36 Degree of satisfaction on decision

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know</td>
<td>27</td>
<td>5.8</td>
<td>5.8</td>
</tr>
<tr>
<td>Not at all</td>
<td>5</td>
<td>1.1</td>
<td>6.8</td>
</tr>
<tr>
<td>Less satisfied</td>
<td>60</td>
<td>12.8</td>
<td>19.7</td>
</tr>
<tr>
<td>Satisfied</td>
<td>234</td>
<td>50.0</td>
<td>69.7</td>
</tr>
<tr>
<td>Completely satisfied</td>
<td>141</td>
<td>30.1</td>
<td>99.8</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.19 Degree of satisfaction on decision of immunizing children against polio

5.14 Media used for the confirmation of decision

Once again the dominant source used for the confirmation of decision regarding acceptance/rejection of the polio immunization campaign comes out to be electronic media (49.1 %), which is followed by doctors/health visitors/friends (25.6 %). Then 46 families (9.8 %) did not opt for any option. Other sources such as traditional media, print media and literature/posters which are used very little by the public in the confirmation
stage. The situation is clear from the respective Pareto chart, the cumulative line, after
two initial jumps, smoothly closing on 100.

Table 5.37 Media use for confirmation of decision

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>46</td>
<td>9.8</td>
<td>9.8</td>
</tr>
<tr>
<td>Electronic media</td>
<td>230</td>
<td>49.1</td>
<td>59.0</td>
</tr>
<tr>
<td>Print media</td>
<td>20</td>
<td>4.3</td>
<td>63.2</td>
</tr>
<tr>
<td>Traditional media</td>
<td>21</td>
<td>4.5</td>
<td>67.7</td>
</tr>
<tr>
<td>Literature/Posters</td>
<td>15</td>
<td>3.2</td>
<td>70.9</td>
</tr>
<tr>
<td>Doctors/Health visitors/Friends</td>
<td>120</td>
<td>25.6</td>
<td>96.6</td>
</tr>
<tr>
<td>No response</td>
<td>16</td>
<td>3.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 5.20 Media use for confirmation of decision

Confirmations Cross Tabulation

Satisfaction level of decision about acceptance/rejection of polio immunization against
exposure to electronic media

Highly significant association is found between the level of satisfaction in taking decision about polio immunization and exposure to electronic media. The rate of the satisfaction and highly satisfactory decision increases as the degree of exposure to electronic media increases.

Table 5.38 Satisfaction level on decision against exposure level of media

<table>
<thead>
<tr>
<th>Decision satisfaction</th>
<th>Exposure to media</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Don't Know</td>
<td>Never</td>
</tr>
<tr>
<td>Don't know</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Not at all</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Less satisfied</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Satisfied</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>Completely satisfied</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>71</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>48.816</td>
<td>16</td>
<td>.000</td>
</tr>
</tbody>
</table>

E. Hypotheses wise Findings

Now the need to address another area of interest, namely the stated hypotheses. It would be of particular interest to conclude these hypotheses in the context of analysis made so far.

Hypothesis 1 Higher the socioeconomic status of parent, the greater would be the awareness level and practice of polio immunization of children.

The association between socio-economic status and awareness about polio
immunization campaign is found to be highly significant P-value=0.000 (Reference Table 5.10). The relevant cross tabulation reveal mark difference between the awareness of the HSE and LSE.

One of the major components of the socio-economic status is profession of the parent also possess highly significant relation with the degree of awareness (Reference Table 5.11). The awareness rises considerable as the employment status rises. The second component of the hypothesis is socio-economic status versus immunization practice of children. So the study also reflects highly significant relation. It is revealed from the study that most of the not immunized children belong to the low-socio-economic status. Similarly partially immunized children mostly belong to the LSE status parents. Pearson chi-square test indicates significant relationship between socio-economic status and immunizing children against polio (Reference Table 5.10).

It also merits mentions that immunization of children increases markedly from lower to higher grade employees.

It is worth mentioning that 160 (34.18 %) families belong to high SEC while 308 (65.8 %) families lie in the low SES, according to the researcher status measuring index. In the high SES group all but except three families are unaware about the polio immunization campaign, while the situation in the low SES is different.

Similarly the cross tab of polio awareness campaign versus education of the parent reveal significant association (P-value=0.000). It is found that unawareness about polio immunization campaign generally decrease with increasing level of education, while the last two categories reflecting the awareness generally increase with the increase level of education (Reference Table 5.8).
On the basis of the aforementioned explanation it can easily be concluded that a visible knowledge-gap is found between the HSE and LSE taking polio immunization campaign as a base.

*Hypothesis II* Heavy the exposure to the electronic media polio immunization campaign, the higher is the effects at various stages (knowledge/awareness, persuasion, decision and confirmation) of innovation decision process.

It can be concluded from the study that positive responses about awareness of polio immunization campaign increases as the exposure to the electronic media increase. Hence significant relationship between awareness and exposure to electronic media is observed (Reference Table 5.12). Similarly more positive attitude towards campaign is observed in those families which are more exposed to the electronic media. Table 5.24 reveals the same fact.

It is found that immunization rate increases rapidly as exposure of the families rises to electronic media. The relevant table 5.35 reflecting strong relation between polio immunization practices and exposure of the parents to electronic media.

The same trend continues, as far as confirmation level of decision is concerned. The rate of confirmation rises as more exposure to electronic media is attained. The correspondingly chi-square test gives highly significant results (Reference Table 5.38).

It is noticeable that almost 80% of those surveyed are exposed to electronic media polio immunization campaign while the rest 20% are still even not exposed to Radio and TV polio immunization campaign.

The use of the electronic media as a source of knowledge about polio immunization campaign is claimed by 61.1%.

Owing to this explanation it can be concluded that heavy exposure to the electronic media results in higher degree of effects at various stages of KAP.
CHAPTER VI

Conclusion

6.1 Discussion

The evaluation of the KAP along with the decision confirmation stage concludes in matching results, found in descending order. Familiarity level of the concept of polio immunization campaign is 90.6 % in the NWFP population. Attitudinal assessments reveal a bit declining figure of 88.7 % for those viewing the usefulness of the polio immunization campaign. This rate decline to 85.9 %, for those who are practicing polio immunization to their children. The analysis of the last stage decision confirmation shows that 80.1 % are satisfied about the decision they have taken. The study reveal that there is still, reasonable number of people ranging from 10 to 12 parent in the above mentioned category who are totally unaware about the immunization campaign.

Among the sources studied, Television is clearly emerged as a dominant source that brings considerable life to polio immunization campaign. According to the findings 79.1 % respondent agreed that TV has played a vital role in bringing awareness, attitude formation, in decision making and even in reinforcement. Time spent on viewing TV is varying considerably. Mostly, the parents in NWFP view TV or listened Radio from two to three hours (38.7 %) population, followed by less than an hour (32.9 %). The study reveals that 12 % of the respondents are never exposed to Radio or TV.

On the basis of this study one can say that electronic media’s impact in terms of cognitive (attention and knowledge), affective (relating to feelings, moods, and attitudes), co-native (behavior, activity and implementation) on parents sharing different socio-economic status in the province is not uniform as is evident from Tables 5.10, 5.21, and
5.31. However, this gap is not too widened but still exists. One can't generalize that this gap is purely due to the heavy exposure to electronic media as there are some other factors equally responsible for creating this gap. The clear and visible standard of living, difference in the level of education, difference in the amount of stored information or previously acquired background knowledge and the nature of mass media that served the dominant elite are some of the factors responsible for the greater rate of immunization in the high socio-economic parents.

Second, in the list of the dominant sources having considerable influence in campaign enhancing is interpersonal communication (doctors/health visitors/friends). Large numbers (62.5%) of respondents are of the view that by the virtue of interpersonal communication their awareness level has increased ultimately paving the way to form an attitude to practice the innovation. Similarly the role of the interpersonal communication in forming favorable attitude for polio immunization practice is also evident from the survey. Findings suggest that 63.1% of the respondents marked that face to face communication either with a doctor/health visitors or a friend/relative formed a positive attitude towards the immunization of children against polio. It is also important to note that the dominant source used for the confirmation of decision regarding acceptance/rejection of the polio immunization comes out to be electronic media (49.1%) followed by 25.5% by interpersonal communication.

Similarly, 48% believe that Radio is playing a role in awareness about polio immunization campaign. Moreover, 45% of the surveyed people favor the notion that Radio is forming favorable attitude towards polio immunization innovation.

Apart from the above discussed dominant sources, some other sources have
played a role for the dissemination of information and attitude formation for polio immunization. The are;

Newspapers and Magazines: According to the survey 24.3 % agree that newspaper play an “effective” to “very effective” role in providing knowledge regarding polio immunization. Similarly, the role of print media in forming attitude is acknowledged by 47.4 % of the respondents which is considered as reasonable high. However, 167 persons (35.7 %) show their unawareness “don’t know” about the said role of the print media.

The role of traditional media and literature/posters is found to be “less effective” as compared to other sources of information in this survey.

Another important aspect of the study is the rejection of polio immunizing innovation. The reason given by 49 families 10.5 % of the sample can be categorized as; lack of knowledge, it affects fertility rate/not safe, not so important, and socio-religious permissibility.

The basic question is how to convince the population having the same sought of a feeling and how to remove various semantic, structural, socio-religious permissibility, and psychological barriers regarding polio immunization.

The study has fulfilled all the main objectives extensively.

The null hypotheses are supported by the research.

6.2 Suggestions and Recommendations

Messages should be made more attractive and engaging. Perhaps a bit of the substance of the message may be sacrificed in order to make the style more appealing. Adapting a message to the audience’s knowledge level and preexisting values is
important, since changing values is very difficult. It is vital that the change agent must try
to change beliefs first, and then relate to values. This strategy requires formative
research, but not just for the sake of doing focus groups or other formative evaluation
research, as this is routinely carried out.

Different theories should be used at different stages of a campaign, or a
combination of elements from different theoretical approaches should be used at an
appropriate place. Most campaigns can use the “hierarchy of effects” model in designing
the campaigns and their evaluation.

We can summarize as;

1. For Polio Free NWFP and of course Pakistan, it is necessary to achieve 100 per cent
immunization coverage of the target population in all parts of the country,
especially in most high risk areas. For this purpose more NIDs and SNIDs should
be conducted at short intervals.

2. A comprehensive communication strategy should be made by using electronic
media, print media, traditional media, and other sources of communication and
information.

3. Innovation practices in health sector do not spread on their own. They require
promotion through bringing about the necessary awareness and interest in the
society. All the available resources need to be used to bring about dynamic changes
in the patter of thinking and practices.

4. Education makes a man more and more effective member of society. It eradicates
superstitions, conservativeness and dogmatism. It is suggested that the government,
the change agents and world economic power chalk a comprehensive plan to
achieve an optimum state of education in NWFP.

5. Efforts aimed at enhancing awareness, partnership, and community participation should be strengthened.

6. Provision of literature about polio infectious disease, and pictures of deformed or crippled children should be given to every house hold in order to motivate the parent or Guardian to cooperate in the fight against polio. Parents should be educated about polio disease and polio vaccine.

7. Refusing parents need to be addressed and convinced to participate in the campaign through various communicational ways or even through administrative orders.

8. Propaganda about polio vaccine, as it causes sterility and use for family planning should be countered by conducting seminars, exhibitions, walks against the polio disease.

9. The number of programs and advertisements on polio immunization must be broadcast with regular intervals.

10. In the cast of advertisement known religious dignitaries should be invited.

11. Religious programs should be produced for clarification of the misconception and fallacy regarding vaccination.

12. There should be an independent monitoring team which could monitor the whole system of polio eradication program.

13. Meetings with the religious leaders and participation of local Imam-e-Masjid should be made in order to convince parents about the importance of polio vaccine.

14. Mosque announcement at every Mosque should be made by local Imam-e-Masjid because parents in rural areas pay heed to such announcements.
15. Participation of Elders, Nazims and Naib Nazims or an area would be helpful for a successful and quality campaign.

16. Weak/non-persistent commitment by the District and Agency Health Teams.

17. High quality immunization activity by increased access to all children in the 24 districts of NWFP, especially the far flung rural areas, through the use of female vaccinators, improved communications and better community mobilization involving local population.

18. Greater government accountability through Governor's oversight, at districts and provincial headquarter level for immunization activities.

19. Strong communication efforts to ensure full participation by all communities in immunization campaign.

20. Strong communication efforts are needed for an effective communication campaign in order to provide correct information on vaccine safety.

21. Continue review of the micro-plans at UC level considering the feedback from previous campaigns especially in missed or poorly covered areas.

22. Continue operating with Provincial Control Room for each round.

23. Adopt sweeping strategy in all poorly covered and missed areas uniformly.

24. Continue involvement and support of higher health authorities to enforce the commitment and ownership at the district level.

25. Continue regular surveillance and campaign reviews for identifying and resolving related issues.

26. The Government, the executing bodies, the donor agencies, must take into account the cultural contexts of audiences while persuading the parents.
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Quarterly.


Immunization Day for the Eradication of Polio.


Switzerland: Avenue Appai.


QUESTIONNAIRE

Please fill out or tick the appropriate answer.

A. Gender: 1=Male____ 2=Female____

B. Your age
1=Under 20 years
2=21-35 years
3=36-50 years
4=51-65 years
5=More than 65 years

C. Educational Level
1=No formal education
2=Primary-Middle
3=MATRIC-Intermediate
4=Graduation
5=Post Graduation

D. Profession
1=Unemployed
2=Labor/farmer/shopkeeper/daily wages worker/driver
3=Grade 1-16 govt., semi-govt., private official
4=Grade 17 and above govt., semi-govt., private official
5=Any other, please mention__________________________

E. Which of the categories includes your households’ total monthly income?
1=Upto Rs. 3,000
2=Rs. 3,001-Rs. 5,000
3=Rs. 5,001-Rs. 10,000
4=Rs. 10,001-Rs. 20,000
5=More than Rs. 20,000

F. Socioeconomic Status (SES)
1=Low socioeconomic status (LSE)
2=High socioeconomic status (HSE)

G. Mark your major source of information.
1=Radio
2=Television
3=Newspapers/Magazines
4=Internet
5=Any other, please mention__________________________
H. Which of the following one is the dominant source of information for your knowledge/awareness about polio immunization of children?
1=Electronic media
2=Print media
3=Traditional media
4=Literature/Posters
5=Doctors/Health visitors/Friends

I. On an average how much daily time do you spend on listening to Radio and watching TV?
1=Not listening or viewing
2=Less than an hour
3=Two to three hours
4=Four to five hours
5=More than five hours

J. How frequently you are exposed to Radio & TV polio immunization campaign?
1=Don't know
2=Never
3=Sometime
4=Frequently
5=Very frequently

K. How much you are familiar with the concept of polio immunization campaign?
1=Don’t know
2=Not at all
3=To some extent
4=To great extent
5=Completely

Information/Awareness stage

How do you rate the following sources for providing information/awareness of polio immunization campaign?

L. Radio (PBC)
1=Don’t know
2=Not effective
3=Less effective
4=Effective
5=Very much effective

M. TV (PTV)
1=Don’t know
2=Not effective
3=Less effective
4=Effective
5=Very much effective
Newspapers/Magazines  Traditional media (Loud Sp. etc.)

N.  
1=Don’t know  O.  
2=Not effective  2=Not effective  
3=Less effective  3=Less effective  
4=Effective  4=Effective  
5=Very much effective  5=Very much effective  

Literature/Posters  Doctors/Health visitors/Relative/Friends

P.  
1=Don’t know  Q.  
2=Not effective  2=Not effective  
3=Less effective  3=Less effective  
4=Effective  4=Effective  
5=Very much effective  5=Very much effective  

R.  How much do you understand the messages of polio immunization campaign floated by various sources of information?  
1=Don’t know  
2=Not at all  
3=To some extent  
4=To great extent  
5= Completely  

Persuasion stage

S.  Do you think that polio immunization is useful for your child health?  
1=Don’t know  
2=No  
3=People says it is useful  
4=Doctors says it is useful  
5=Yes  

Upto what extent the following sources formed a favorable attitude towards the immunization of your children against polio?

Radio (PBC)  TV (PTV)

T.  
1=Don’t know  U.  
2=Not at all  2=Not at all  
3=To some extent  3=To some extent  
4=To great extent  4=To great extent  
5= Completely  5= Completely
Newspapers/Magazines  Traditional media (Loud Sp. etc.)

V.  
1= Don’t know  
2= Not at all  
3= To some extent  
4= To great extent  
5= Completely  

W.  
1= Don’t know  
2= Not at all  
3= To some extent  
4= To great extent  
5= Completely  

Literature/Posters  Doctors/Health visitors/Relatives/Friends

X.  
1= Don’t know  
2= Not at all  
3= To some extent  
4= To great extent  
5= Completely  

Y.  
1= Don’t know  
2= Not at all  
3= To some extent  
4= To great extent  
5= Completely  

Z.  Have you immunized your children against polio?  
1= No  
2= Immunized only male child  
3= Immunized only female child  
4= Partially immunized  
5= Yes immunized all children under the required age group  

AA.  You have adopted the polio immunization innovation after knowing its importance through;  
1= Electronic media  
2= Print media  
3= Traditional media  
4= Literature/Posters  
5= Doctors/Health visitors/Friends  

AB.  Have you adopted polio vaccination of your children due to which of the following reason?  
1= Economically viable/Easily available  
2= Effective in eradicating polio  
3= Highly publicized and motivated campaign  
4= From the fear of isolation  
5= Any other, please mention ________________________  

AC.  Have you rejected the polio immunization due to which of the following reason?  
1= Lack of knowledge/awareness  
2= It affects fertility/polio vaccine is not safe  
3= Religious/social barriers  
4= It is not so important/It is a mass mediated view  
5= Any other, please mention ________________________
AD. Rate yourself into the five distinct groups of potential adopters for polio immunization innovations.
1=Laggards
2=Late majority
3=Early majority
4=Early adopters
5=Innovators

Confirmation stage

AE. How much are you satisfied with your decision (acceptance/rejection) of immunizing your children against polio?
1=Don’t know
2=Not at all
3=Less satisfied
4=Satisfied
5= Completely Satisfied

AF. After adoption of the polio immunization innovation, which of the following sources of information you use for the confirmation of your decision?
1=Electronic media
2=Print media
3=Traditional media
4= Literature/Posters
5= Doctors/Health visitors/Friends

Thank you very much for your time and efforts
Map of North West Frontier Province (NWFP), Pakistan